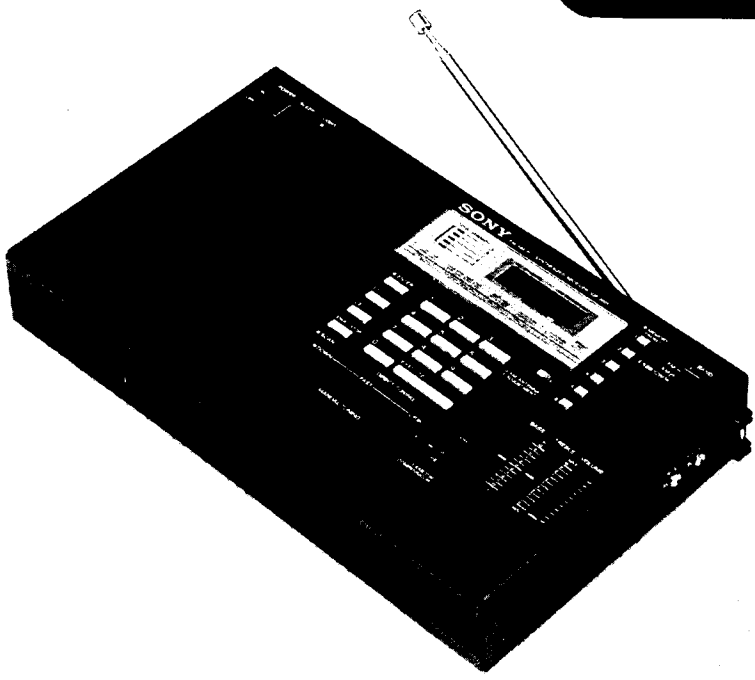
ICF-2001

US Model
Canadian Model
AEP Model
UK Model
E Model



FM/AM PLL SYNTHESIZED RECEIVER

SPECIFICATIONS

Circuit System:
FM: Superheterodyne
AM: Dual conversion superheterodyne

Frequency Range:
US, Canadian, UK, E model:
FM 76 to 108 MHz
AM 150 to 29,999 kHz (2,000 to 10 m)
AEP model:
FM 87.5 to 108 MHz
AM 150 to 26,100 kHz (2,000 to 11 m)

Antennas:
Telescopic antenna (AM/FM)
Built-in ferrite bar antenna (AM 360 to 2,143 kHz)
External antenna terminals (AM/FM)

Speaker:
Approx. 10 cm (4 inches) diameter

Power Output:
1,200 mW (at 10 % harmonic distortion), 1,600 mW (max.)

Input:
Timer input jack (minijack)

Outputs:
Recording output jack (minijack)
output level 0.8 mV (–60 dB)
output impedance 1 kΩ
Earphone jack (minijack)
for 8 Ω earphone

Power Requirements:
US, Canadian model:
Radio: 4.5 V dc, three D size batteries (IEC designation R20)
120 V ac, 60 Hz with supplied Sony AC-120 W AC Power Adaptor
12 V car battery with optional Sony DCC-127A Car Battery Cord
Computer: 3 V dc, two AA size batteries (IEC designation R6)

AEP, UK, E model:
Radio: 4.5 V dc, three IEC designation R20 batteries (D size)
110, 127, 220 or 240 V ac
50 Hz (AEP model)
50/60 Hz (UK, E model)
with optional Sony AC-122 AC Power Adaptor 12 V car battery with optional Sony DCC-127A Car Battery Cord
Computer: 3V dc, two IEC designation R6 batteries (AA size)

Power Consumption:
US, Canadian model:
7 W ac with Sony AC-120 W AC Power Adaptor
AEP model:
16 W ac at 50 Hz with Sony AC-122 AC Power Adaptor
UK model:
9.5 W ac at 50 Hz with Sony AC-122 AC Power Adaptor
E model:
16 W ac at 50 Hz, 15 W ac at 60 Hz with Sony AC-122 AC Power Adaptor

— Continued on page 2 —

SONY®
SERVICE MANUAL

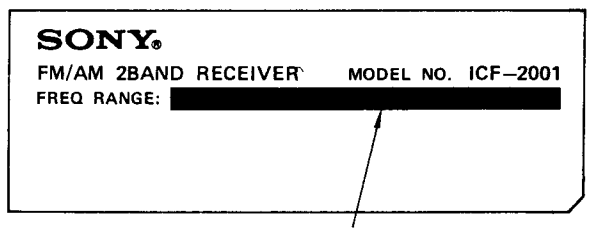
Battery Life: US, Canadian model:
Radio: with Eveready Batteries No. 1050:
Approx. 9 hours, if tuned to AM
Approx. 10 hours, if tuned to FM
Computer: with Eveready Batteries No. 1015, approx. 1 year of continuous operation
AEP, UK, E model:
Radio: with Sony SUM-1S Super Batteries:
Approx. 9 hours, if tuned to AM
Approx. 10 hours, if tuned to FM
Computer: with Sony SUM-3S Super Batteries, approx. 1 year of continuous operation

Dimensions: Approx. 310(w) x 171(h) x 56(d) mm
12¼(w) x 6¾ (h) x 2¼ (d) inches
including projecting parts and controls

Weight: Approx. 1,800 g, 4 lb
including batteries

MODEL IDENTIFICATION

– Specification Label –



US, Canadian, UK, E model: FM 76 – 108 MHz AM 150 – 29999 kHz
AEP model: FM 87.5 – 108 MHz AM 150 – 26100 kHz
(UK, E model: marked on the stand)

Handling Precautions for MOS ICs (IC3 – 5, IC201 – 205)

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential.
   (The ICs should be stored in that manner until mounted on the circuit board.)

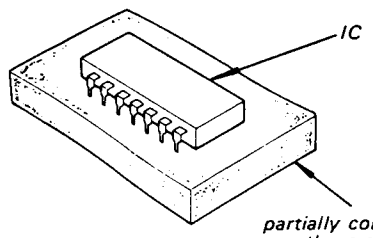


Fig. A

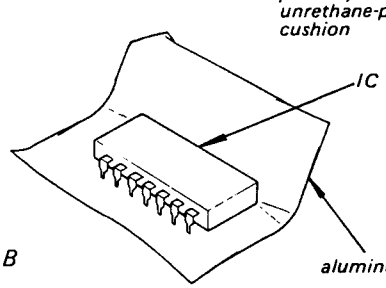


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

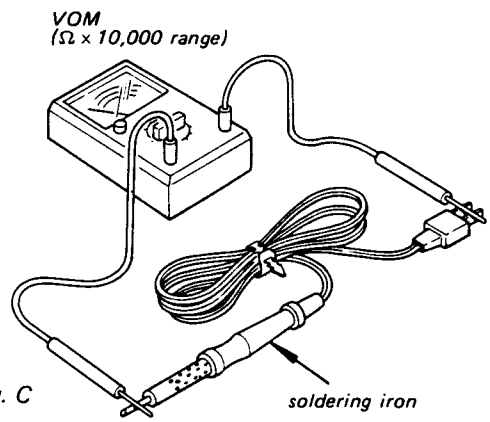


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.

4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
   - Use a paper clip modified by soldering in a wire braid insert.

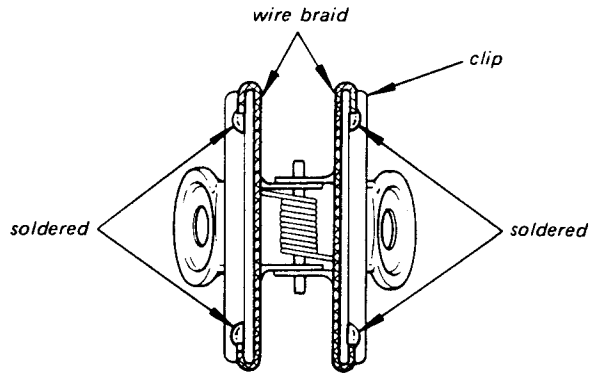


Fig. D

Make sure that there is no solder on the inside.

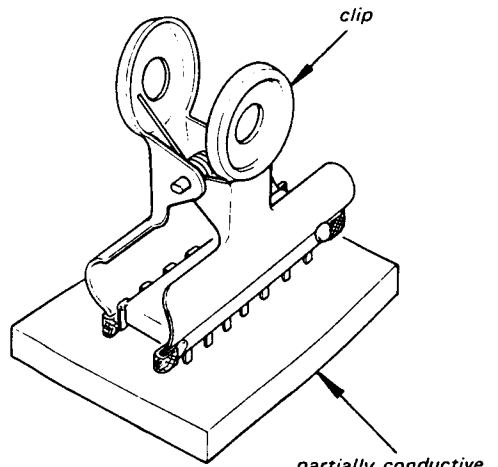


Fig. E

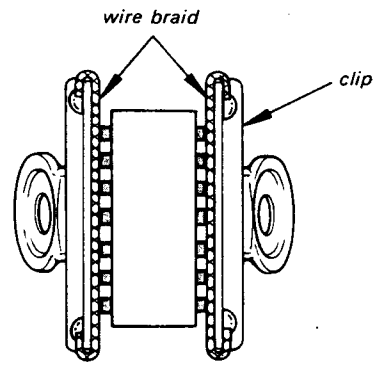


Fig. F

Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

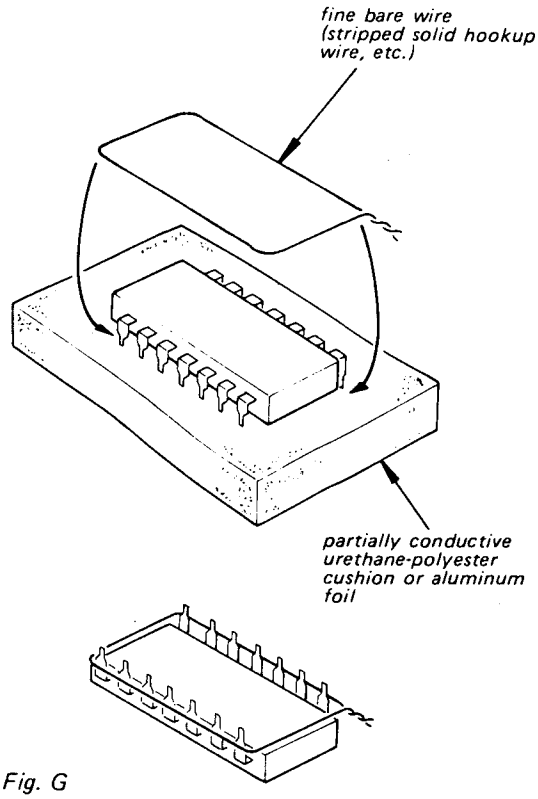


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

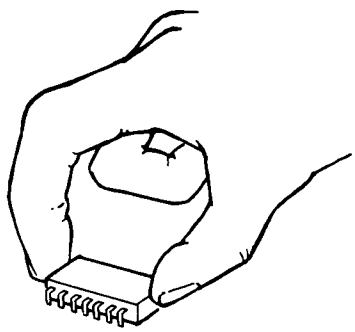


Fig. H

5. Method of Mounting
Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

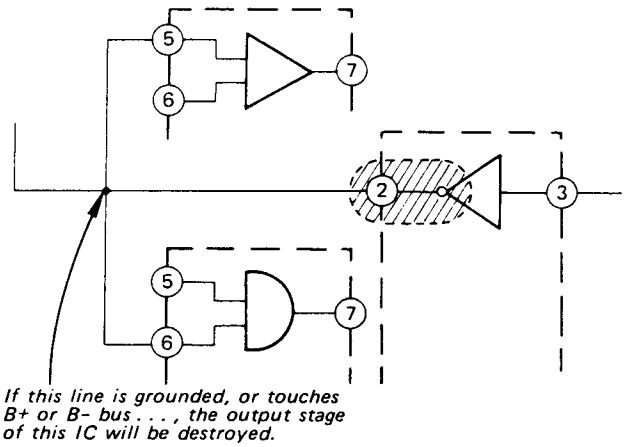
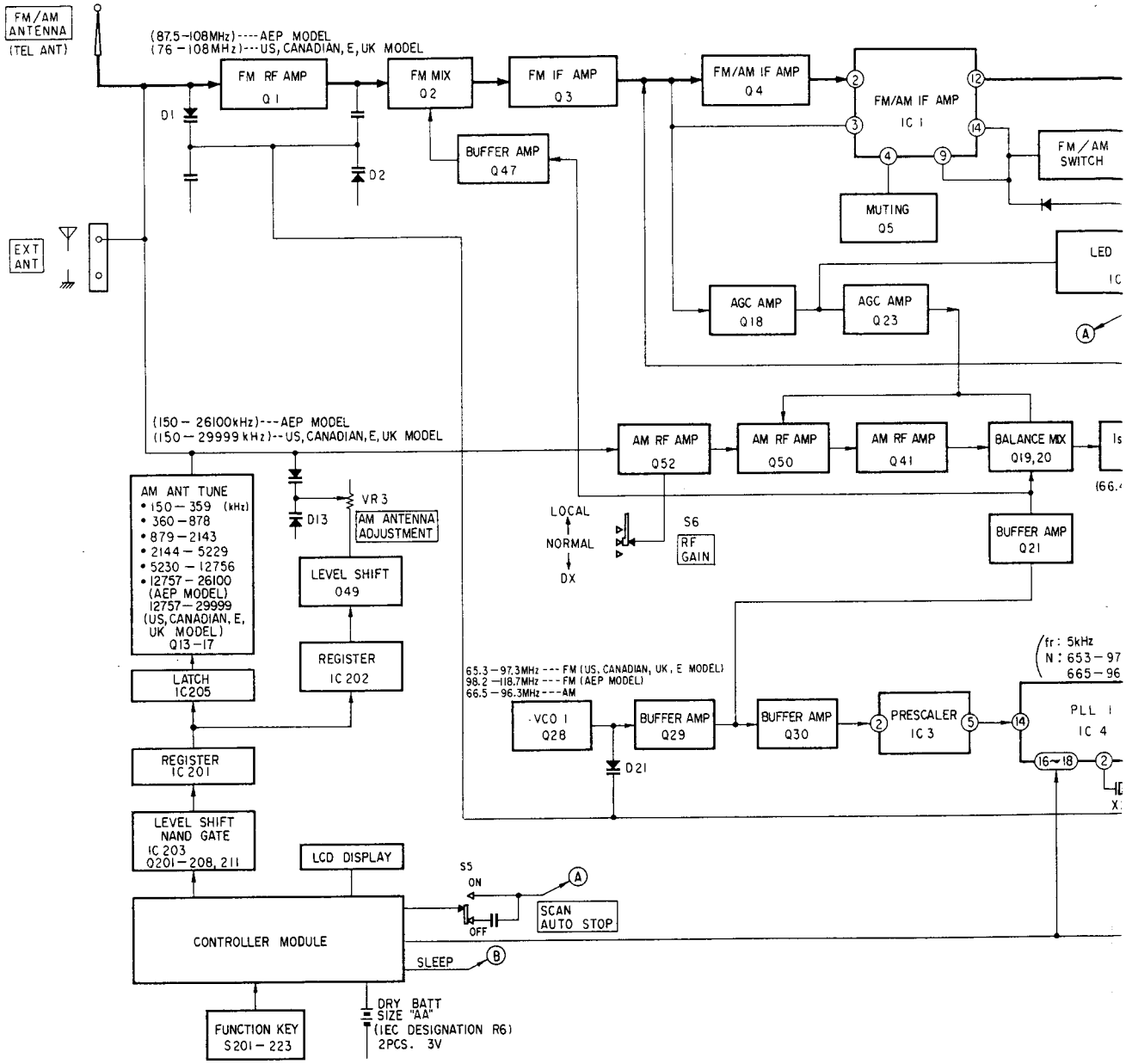
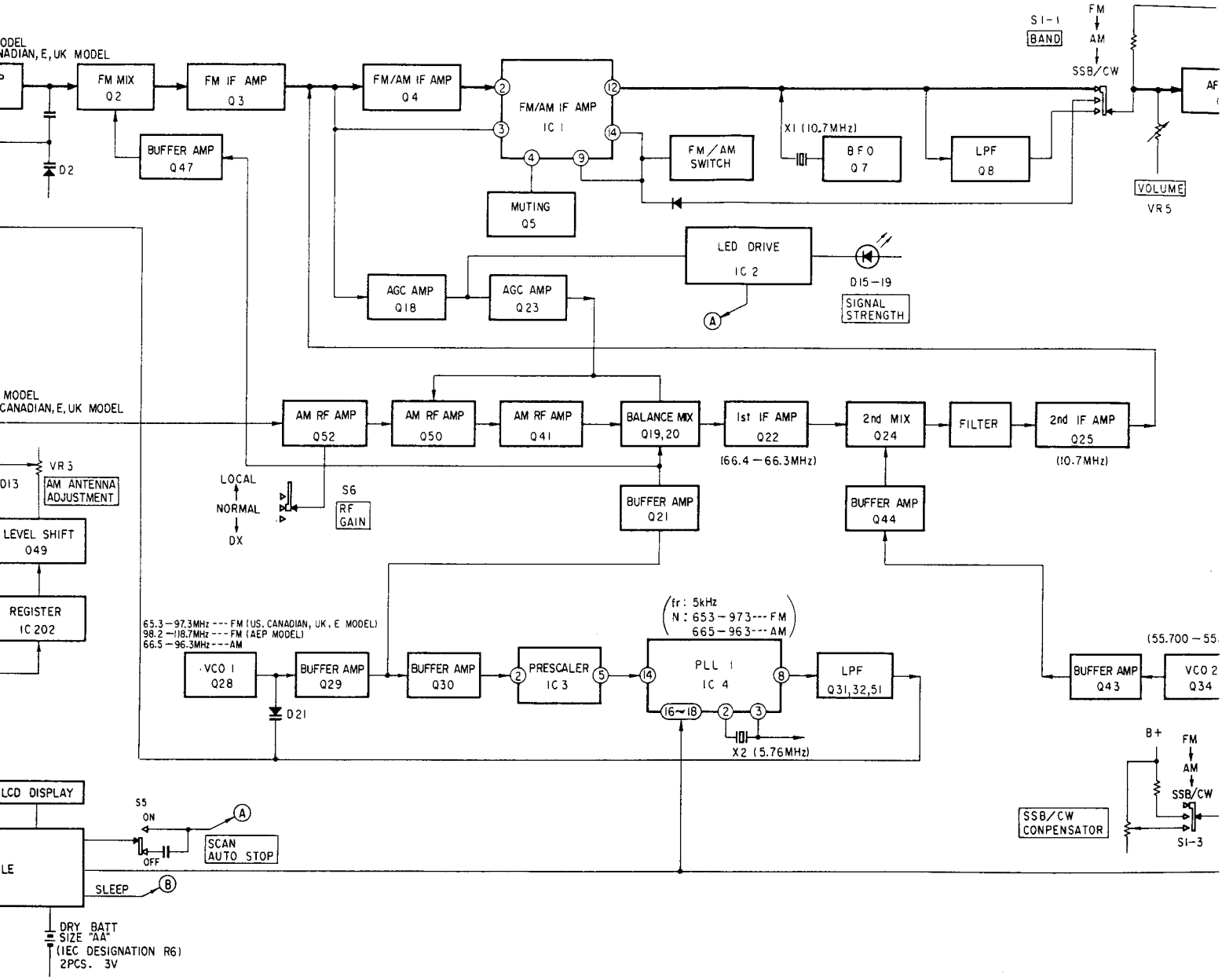


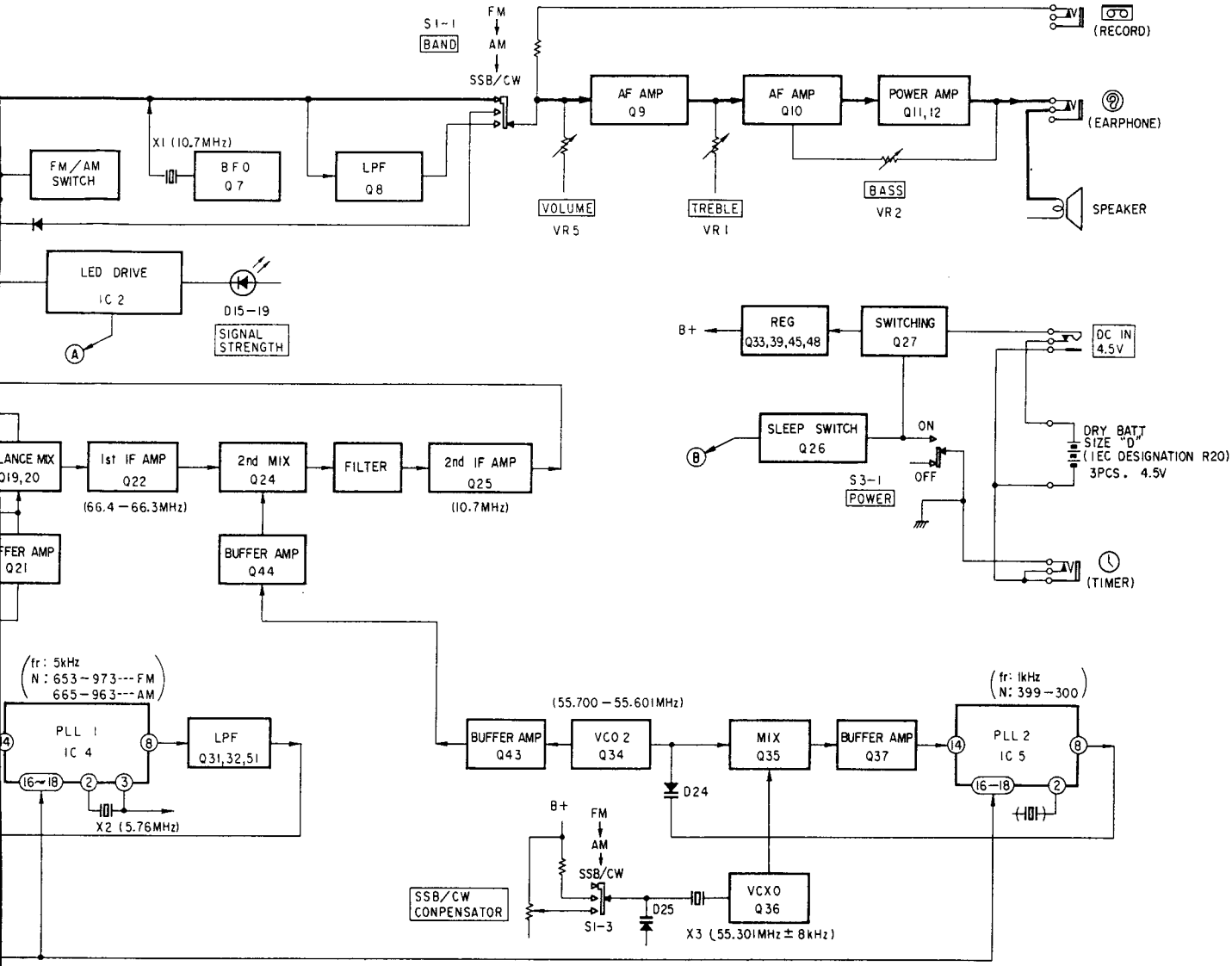
Fig. I

SECTION 1
BLOCK DIAGRAM



SECTION 1
BLOCK DIAGRAM

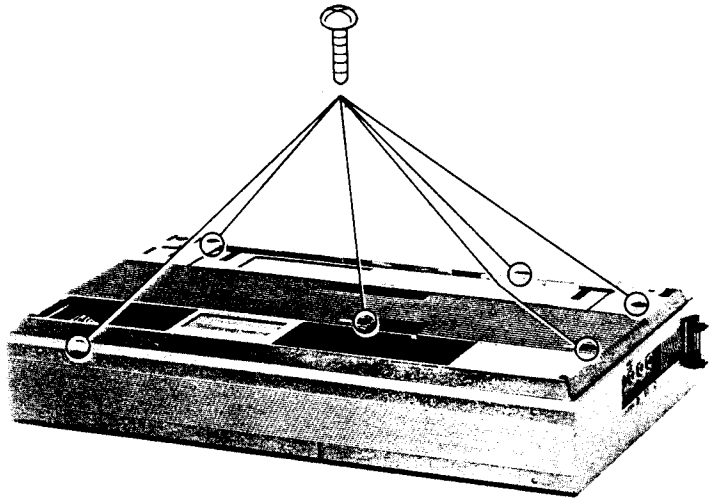



S1-1
BAND
FM
AM
SSB/CW
(RECORD)
AF AMP
Q9
AF AMP
Q10
POWER AMP
Q11, 12
(EARPHONE)
FM/AM
SWITCH
X1 (10.7MHz)
BFO
Q7
LPF
Q8
VOLUME
VR5
TREBLE
VR1
BASS
VR2
SPEAKER
LED DRIVE
IC 2
D15-19
SIGNAL
STRENGTH
B+
REG
Q33,39,45,48
SWITCHING
Q27
DC IN
4.5V
SLEEP SWITCH
Q26
ON
OFF
S3-1
POWER
DRY BATT
SIZE "D"
(IEC DESIGNATION R20)
3PCS. 4.5V
(TIMER)
1st IF AMP
Q22
(66.4 - 66.3MHz)
2nd MIX
Q24
FILTER
2nd IF AMP
Q25
(10.7MHz)
BUFFER AMP
Q44
BUFFER AMP
Q21
(fr: 5kHz
N: 653-973---FM
665-963---AM)
PLL 1
IC 4
LPF
Q31,32,51
X2 (5.76MHz)
(55.700 - 55.601MHz)
BUFFER AMP
Q43
VCO 2
Q34
MIX
Q35
BUFFER AMP
Q37
(fr: 1kHz
N: 399-300)
PLL 2
IC 5
D24
B+
FM
AM
SSB/CW
SSB/CW
CONPENSATOR
S1-3
D25
VCXO
Q36
X3 (55.301MHz ± 8kHz)

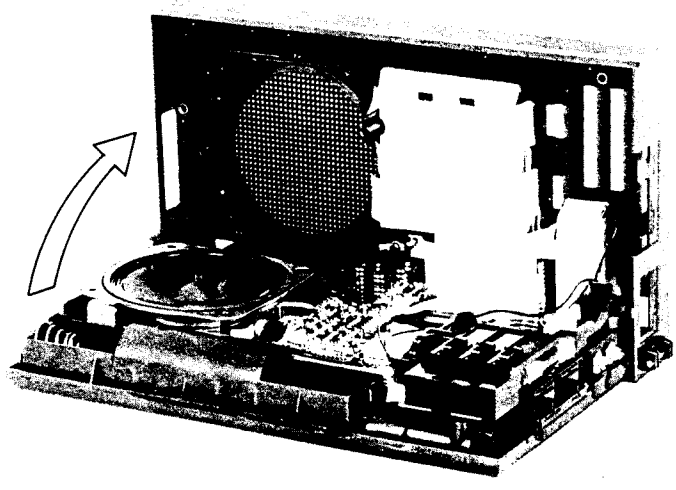
SECTION 2
DISASSEMBLY

FRONT PANEL

PTP3 x 20 (6 pieces)

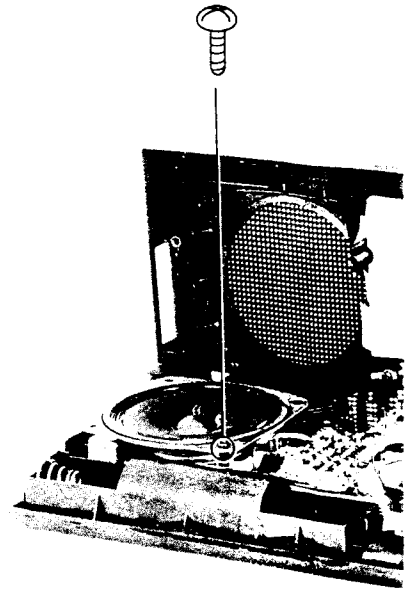


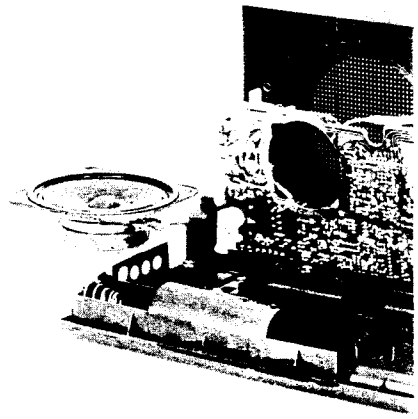
Turn the set
upside down.



MAIN BOARD

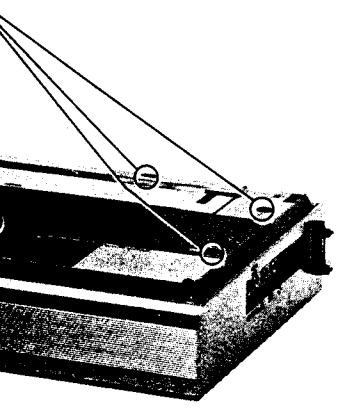
BTP3 x 8



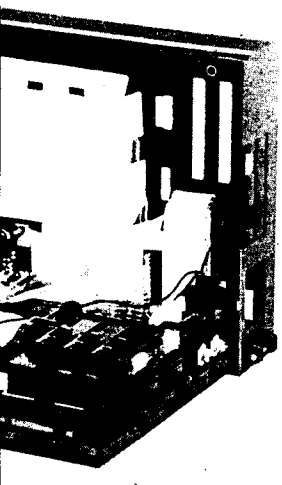


SECTION 2
DISASSEMBLY

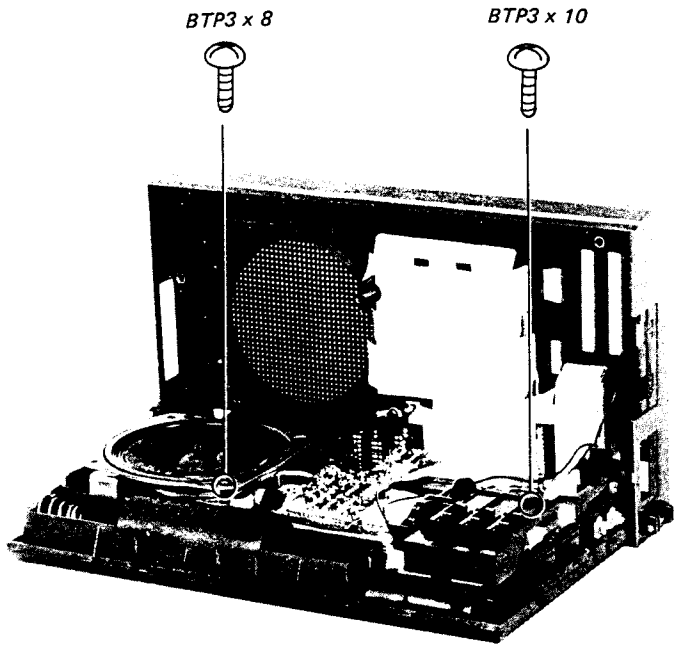
6 pieces)

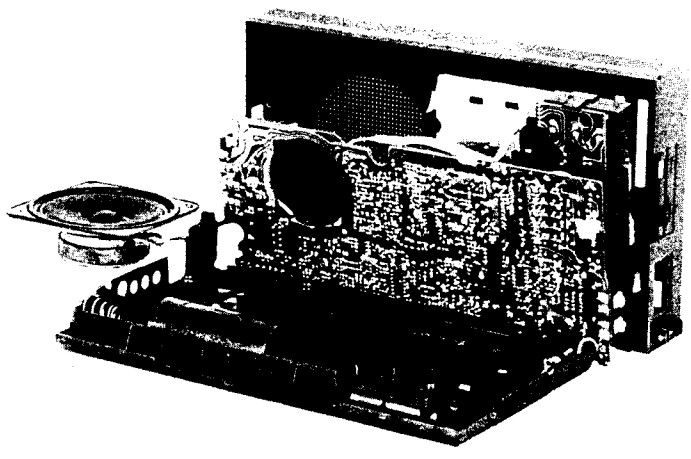


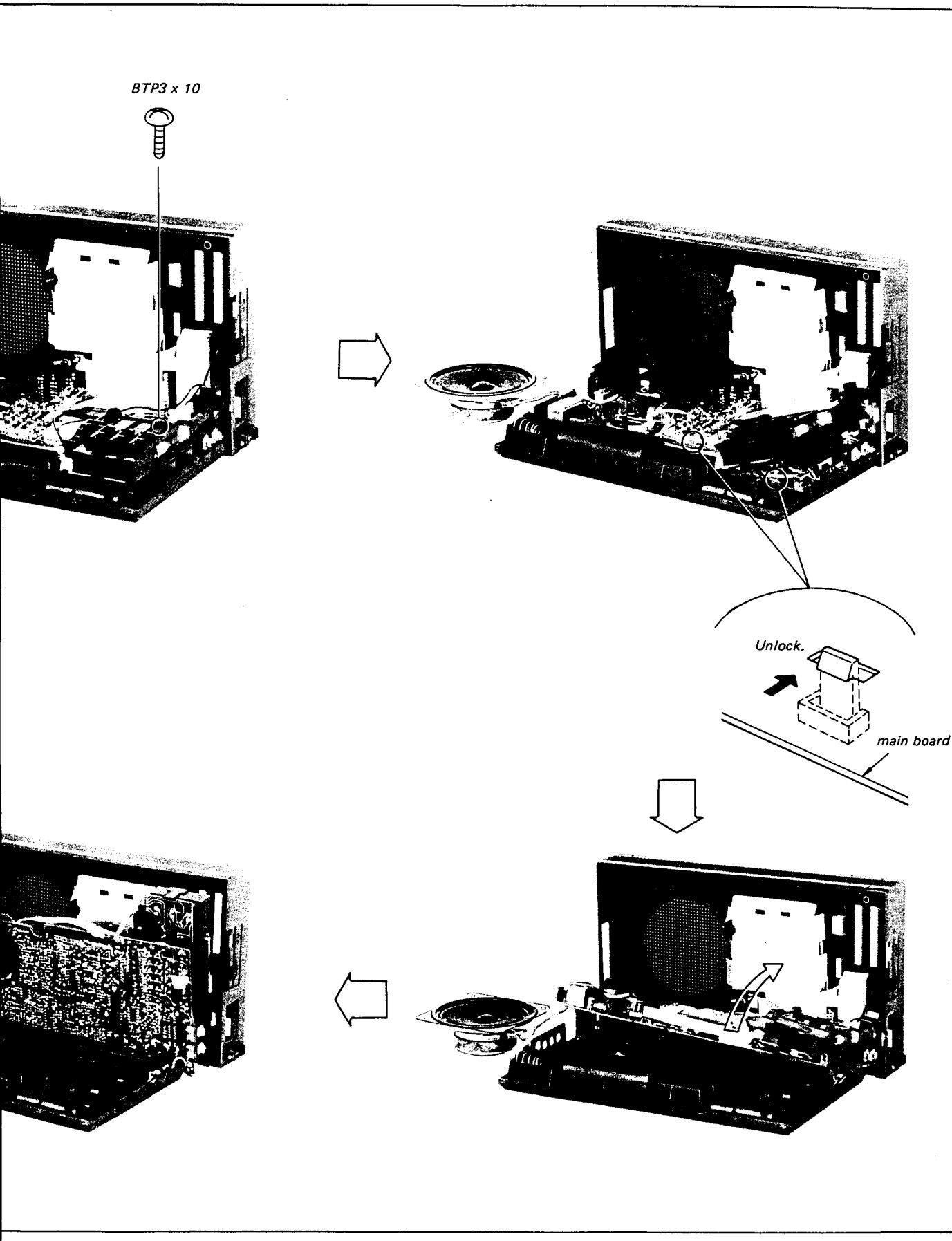
the set
e down.



MAIN BOARD






BTP3 x 10
Unlock.
main board

SECTION 3
ADJUSTMENTS

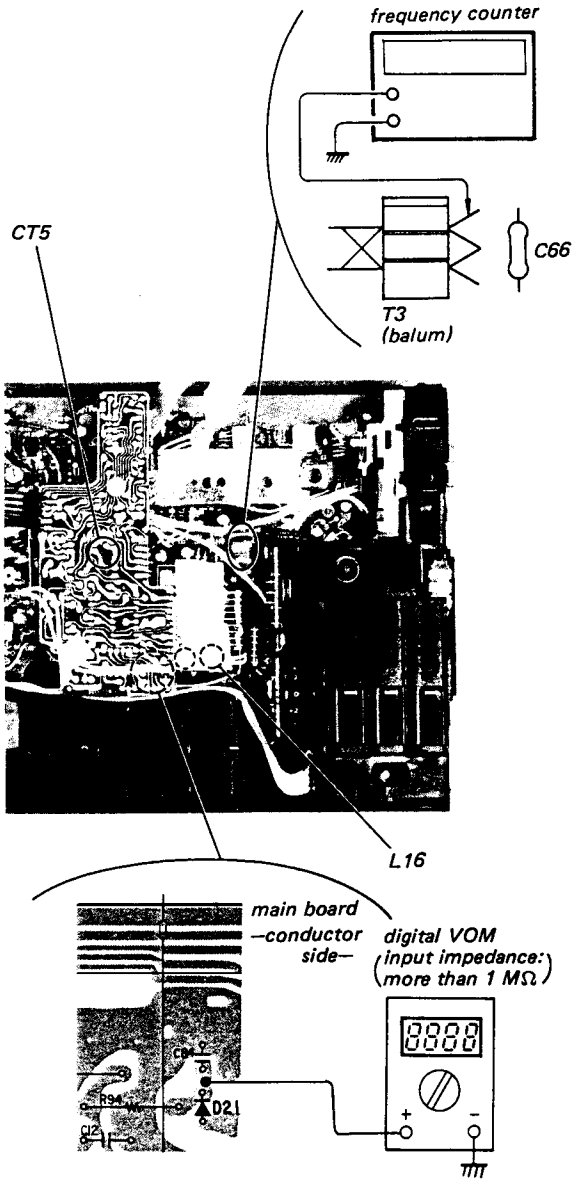
PLL1 Adjustment

Setting:

BAND Switch: FM

Procedure:

1. Press the Counter Keys for 108 MHz reading on the Frequency Display.
2. Adjust L16 for 8.5 ± 0.05 V dc (US, Canadian, UK, E model), 7.5 ± 0.05 V dc (AEP model) reading on the digital VOM.
3. Adjust CT5 for 97,300 MHz (118.70 MHz: AEP model) reading on the frequency counter.
4. Obtain 76 MHz (US, Canadian, UK, E model), 87.5 MHz (AEP model) reading on the Frequency Display again and confirm that the frequency counter reading is 65.3 MHz (US, Canadian, UK, E model), 98.2 MHz (AEP model).



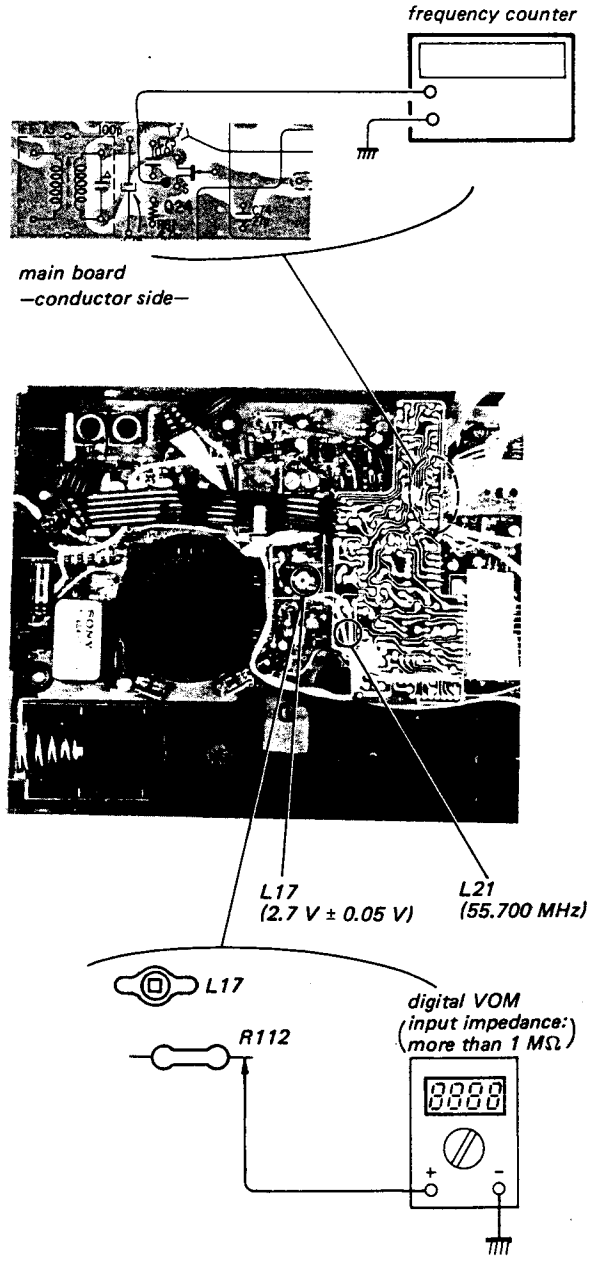
PLL2 Adjustment

Setting:

BAND Switch: AM

Procedure:

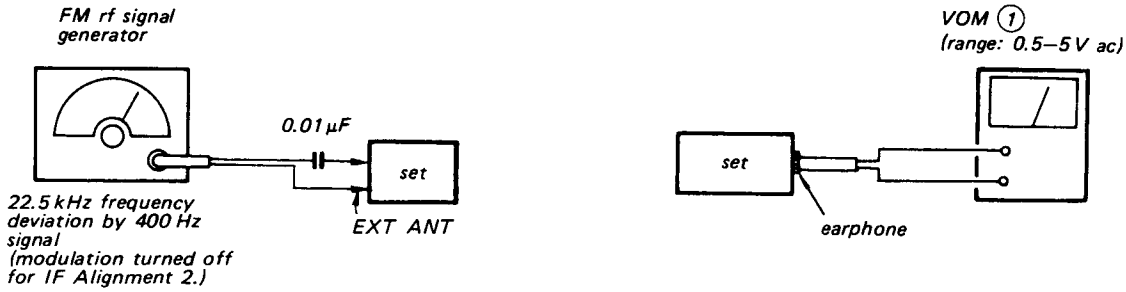
1. Press the Counter Keys for 1000 kHz reading on the Frequency Display.
2. Adjust L17 for 2.7 ± 0.05 V dc reading on the digital VOM and adjust L21 for 55.700 MHz reading on the frequency counter.
3. Press the Counter Keys for 999 kHz on the Frequency Display and confirm that the frequency counter reading is 55.601 MHz.



FM IF Alignment/FM Tracking Adjustment

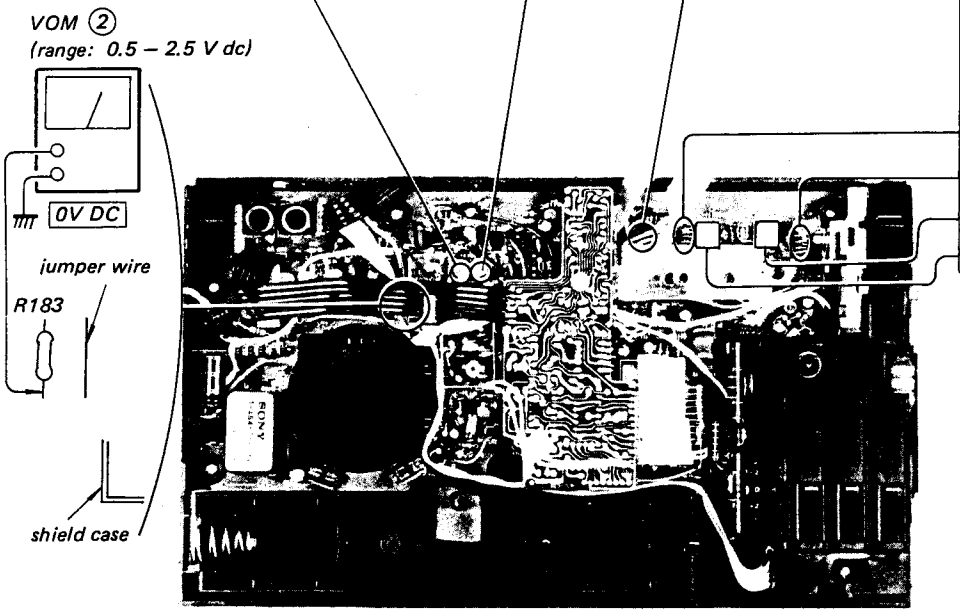
Setting:

BAND Switch: FM



FM IF ALIGNMENT 2 (10.7 MHz with no modulation)
Adjust for 0 V reading on VOM ②.
IFT-F3

FM IF ALIGNMENT 1 (10.7 MHz with modulation)	
Adjust for a maximum reading on VOM ①.	
IFT-F2	IFT-F1



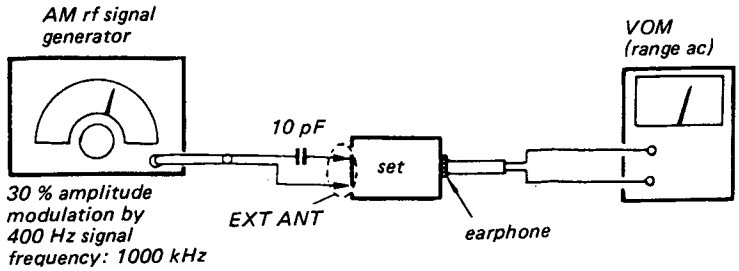
TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
L2	76 MHz (87.5 MHz)
L1	
CT1	108 MHz
CT2	

( ): AEP model

AM IF Alignment

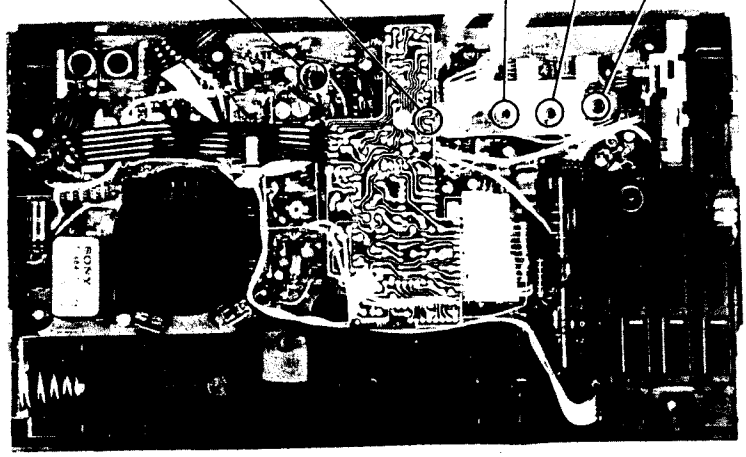
Setting:

BAND Switch: AM



2ND IF ALIGNMENT	
Adjust for a maximum reading on VOM .	
IFT-A1	IFT-A3

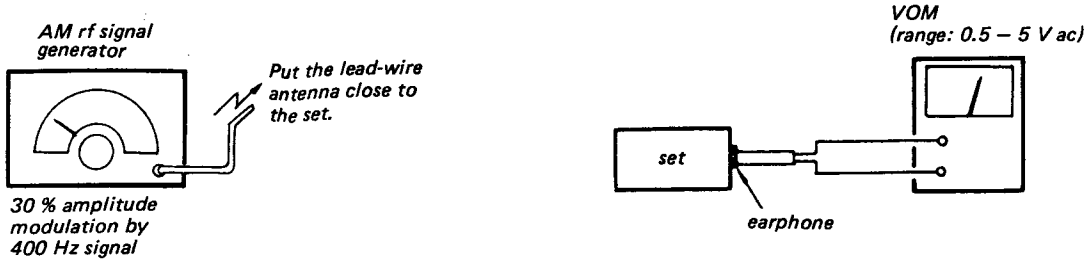
1ST IF ALIGNMENT		
Adjust for a maximum reading on VOM .		
L14	L13	IFT-A2



AM Antenna Tracking Adjustment

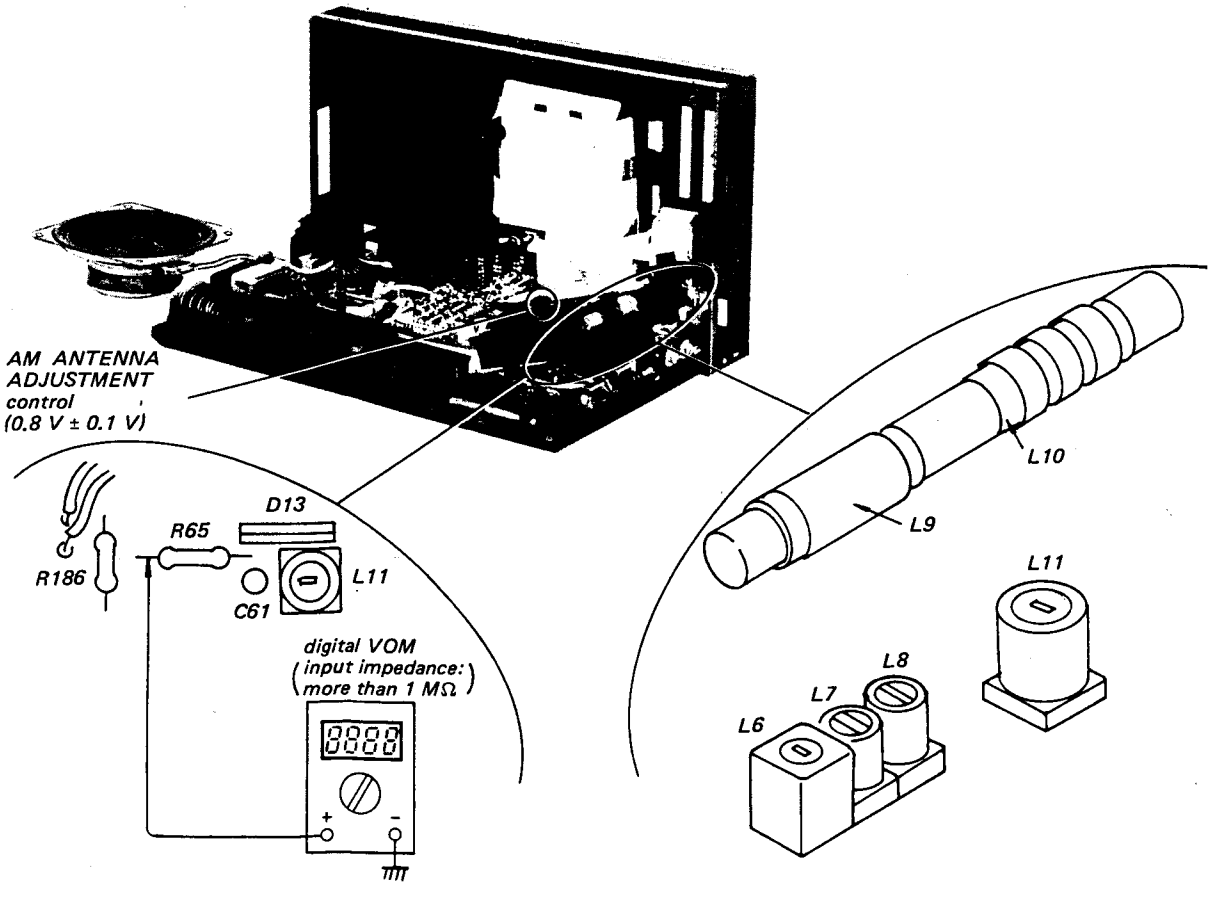
Setting:

BAND Switch: AM


AM rf signal generator
Put the lead-wire antenna close to the set.
30 % amplitude modulation by 400 Hz signal
VOM (range: 0.5 – 5 V ac)
set
earphone

1. Press the Counter Keys for 150 kHz reading on the Frequency Display.
2. Adjust the AM ANTENNA ADJUSTMENT control for 0.8 ± 0.1 V dc reading on the digital VOM.
3. Adjust each coil for the maximum reading on the VOM.

Frequency Display Reading (kHz)	Adjustment Part
881	L9
361	L10
150	L11
2149	L8
5242	L7
12786	L6

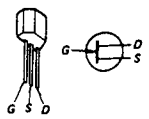


MEMO

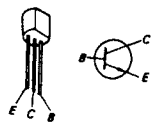
Replacement Semiconductors

For replacement, use semiconductors except in ( ).

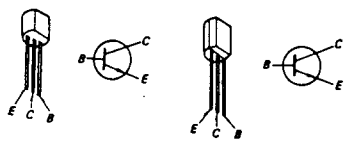
Q1, 22: 2SK42-2 (2SK42)
Q21, 25 } : 2SK161
Q29, 43 }



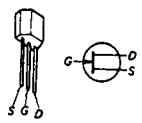
Q2, 3, 4, 7
Q34, 35, 37 } : 2SC930
Q44, 47, 50 }
Q5, 46, 48
Q49, 51, 53 } : 2SC1364 (2SC536)
Q201~208, 211 }
Q11, 12: 2SC1474



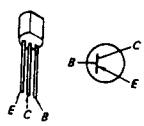
Q6, 8~10
Q13~18, 23 } : 2SC1364 (2SC1633)
Q33, 38, 39 }
Q45: 2SC1364 (2SC945)



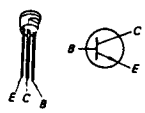
Q19, 20: 2SK184
Q24: 2SK23A-834 (2SK23A)
Q31: 2SK23A-812 (2SK23A)



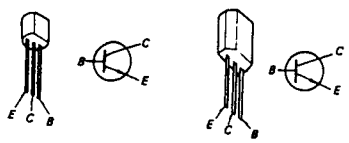
Q27: 2SA772-14 (2SA772)



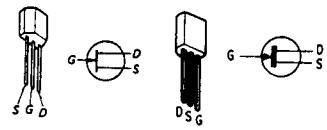
Q28, 30, 36: 2SC668



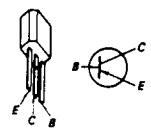
Q32: 2SC1364 (2SC634A)



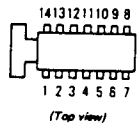
Q41, 52: 2SK23A-834 (2SK107)



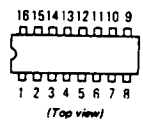
Q209: 2SA1027R (2SA1026)



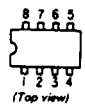
IC1: CX162



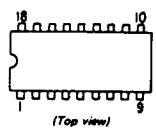
IC2: LB1405
IC201, 202: TC4015BP (MSM4015)
IC205: TC40174BP



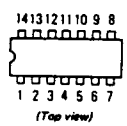
IC3: μPB552C



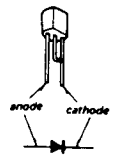
IC4, 5: μPD2819C



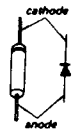
IC203: TC4011BP (MSM4011)



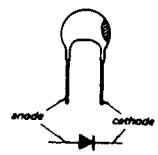
D1, 2, 21, 25: SVC201



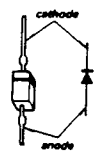
D3~5: 1T261
D8: 1T26
D24: 1S2139C (SD115)
D27: RD3.6E-BZ8
D28, 33~35, 201: 1S1555
D29: RD16E (RD16E-B1)
D36: RD6.2E



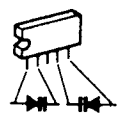
D7, 20: VD1120



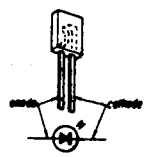
D9~12: 1S2222



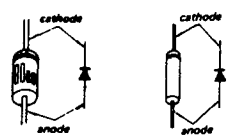
D13: KV1211



D15~19: SLP155B



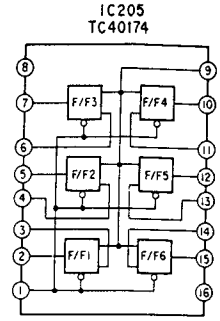
D23: EQB01-12Z (RD12E-B2)

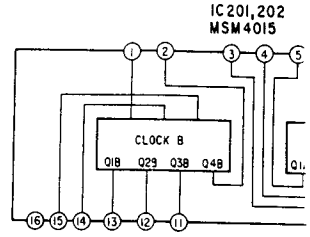


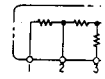
SECTION 4
DIAGRAMS

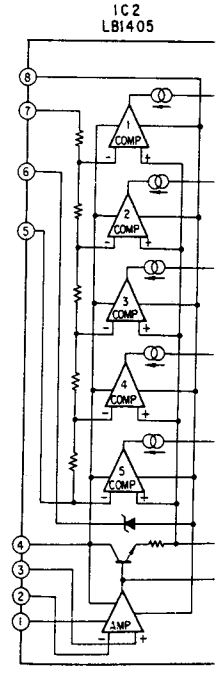
4-1. MOUNTING DIAGRAM

Refer to page 14 for replacement semiconductors.



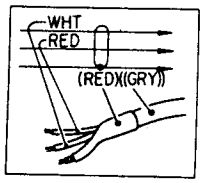






Note:

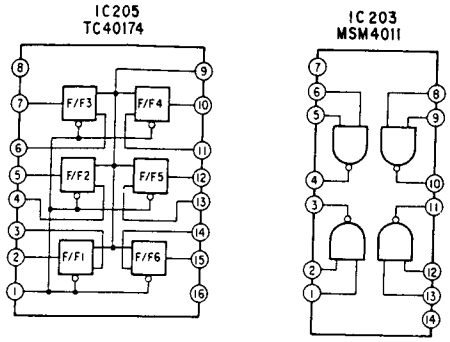
- Color code of sleeving over the end of the jacket.

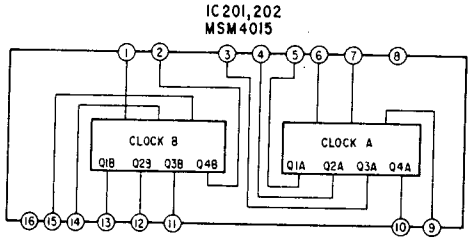


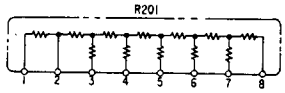
- ○— : parts extracted from the component side.
- ■ : part mounted on the conductor side.
- [ ]— : indicates side identified with part number.
- DC resistance measurements are with coils and transformers connected on the circuit board, and are approximate.
- : B + pattern
- ▬▶▬ : signal path (FM)
- Readings are taken under no-signal (detuned) conditions with a VOM (20 kΩ/V).
  no mark: FM FREQUENCY DISPLAY: 98.1 MHz
  ( ) : AM FREQUENCY DISPLAY: 1023 kHz
  《 》: SSB/CW

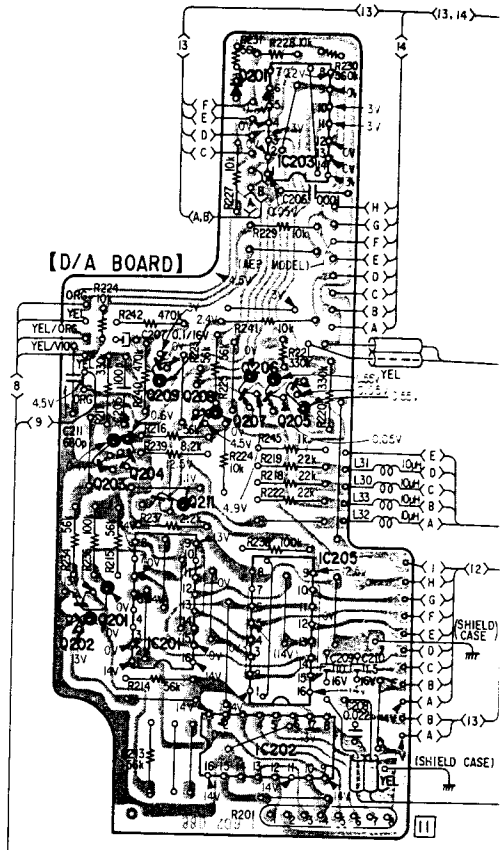
A B C D

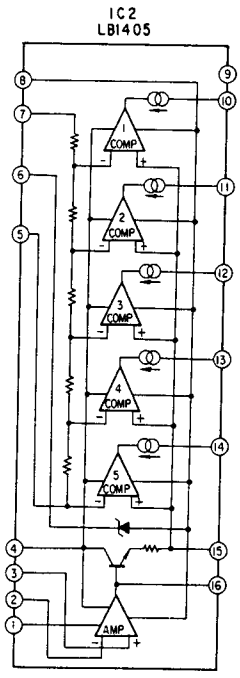
1 2 3 4 5

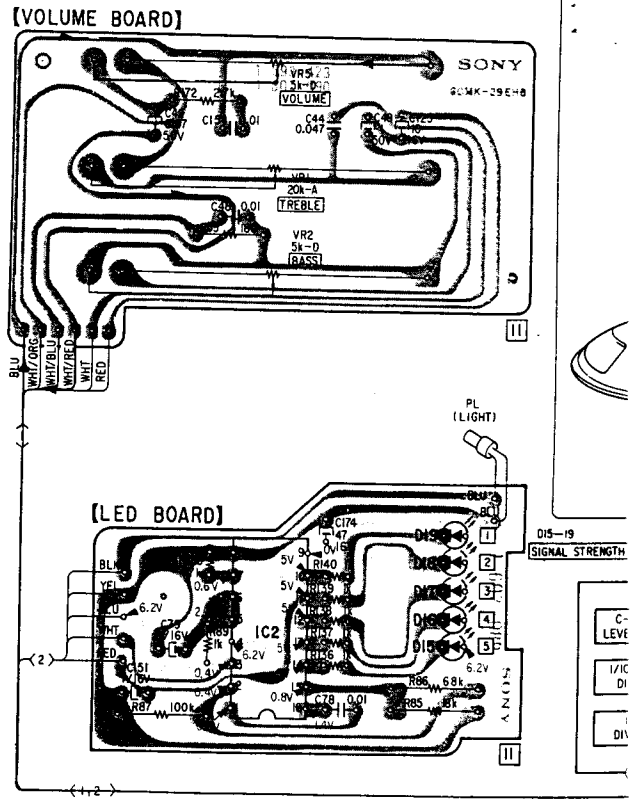






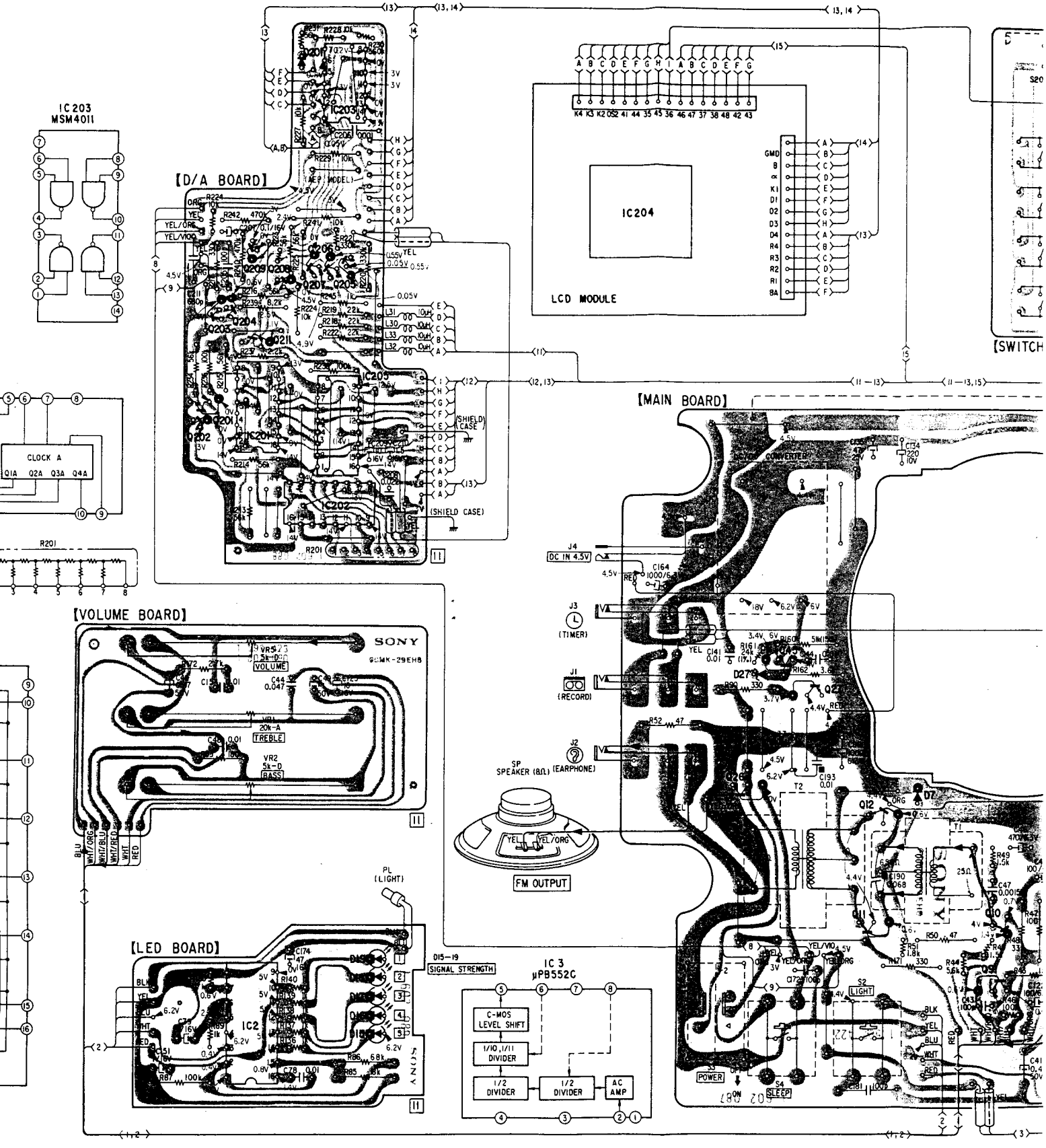




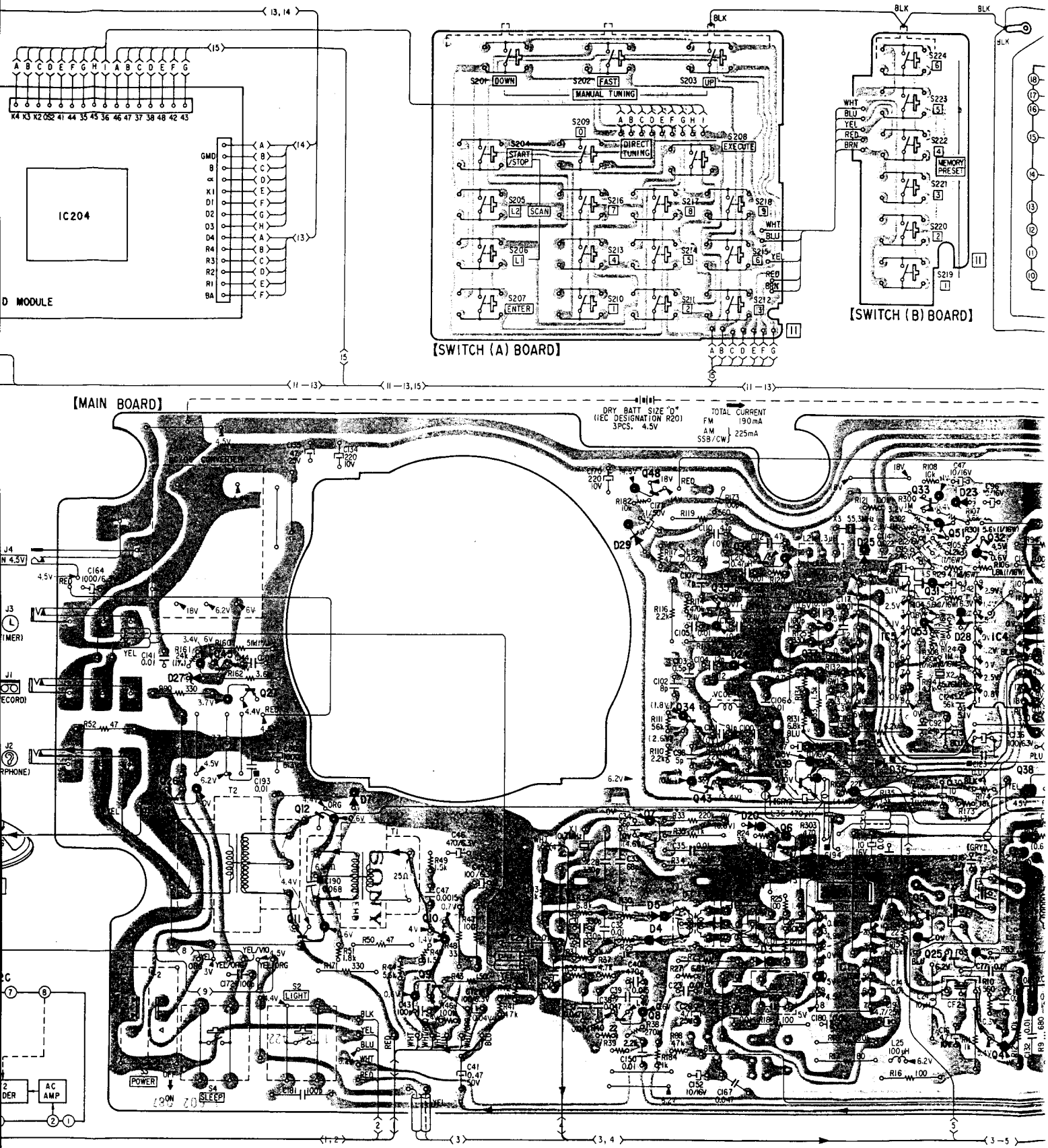


Q・IC	204 209 208 207 IC203 203 211 206 205 201 IC201 IC205 202 IC2 IC202
D	201 15 19

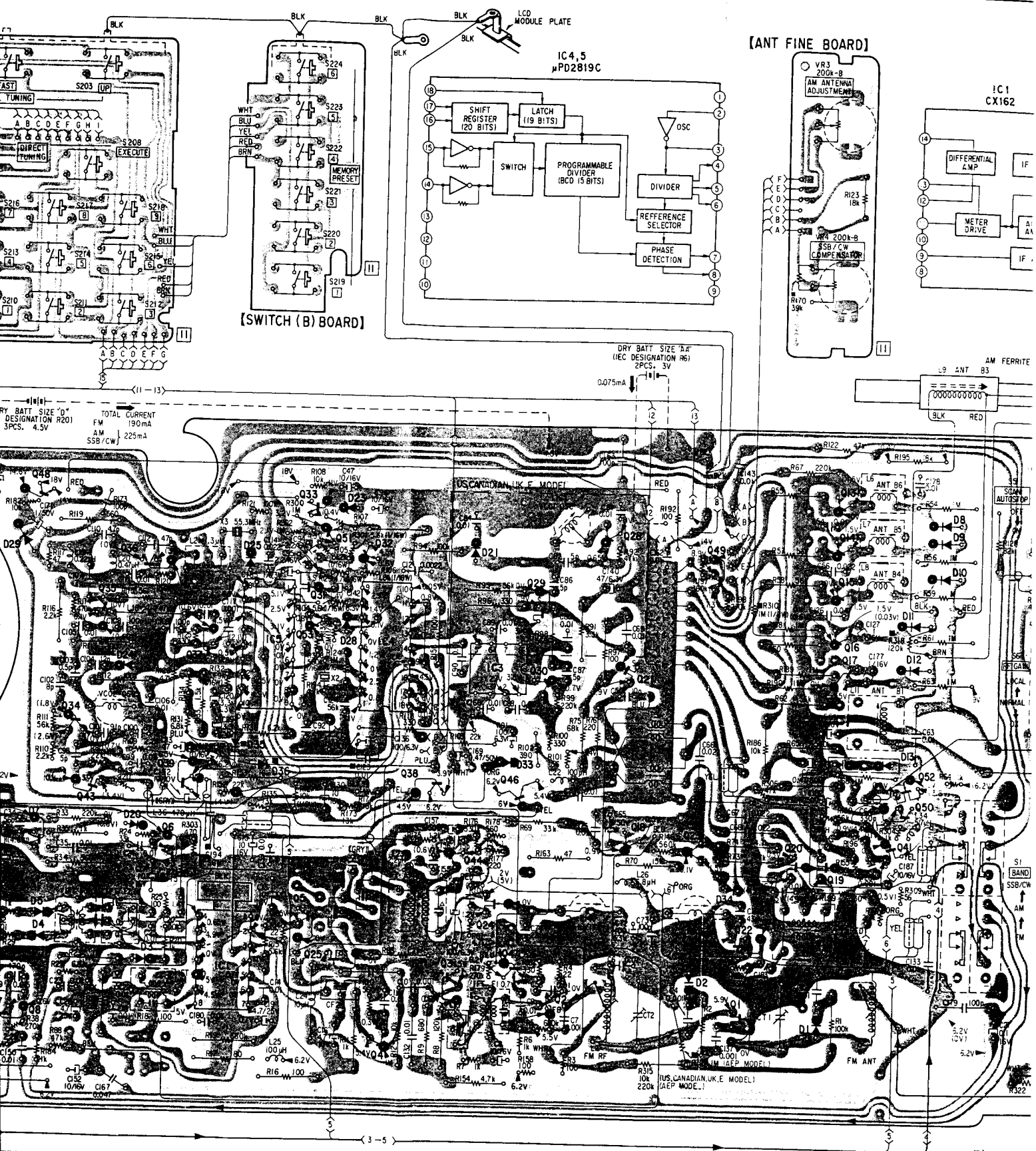
C D E F



Q · IC	204 209 208 207 IC203 203 211 206 205 201 IC201 IC205 202 IC2 IC202 IC204 26 27 45 12 11 10 9
D	201 15 19 27 7


IC204
D MODULE
[SWITCH (A) BOARD]
[SWITCH (B) BOARD]
[MAIN BOARD]
DRY BATT SIZE "D" (IEC DESIGNATION R20) 3PCS. 4.5V
TOTAL CURRENT FM 190mA AM SSB/CW 225mA
S201 DOWN
S202 FAST
S203 UP
MANUAL TUNING
S204 START/STOP
S205 SCAN
S206
S207 ENTER
S208 EXECUTE
S209
DIRECT TUNING
MEMORY PRESET
POWER
SLEEP
LIGHT
AC AMP

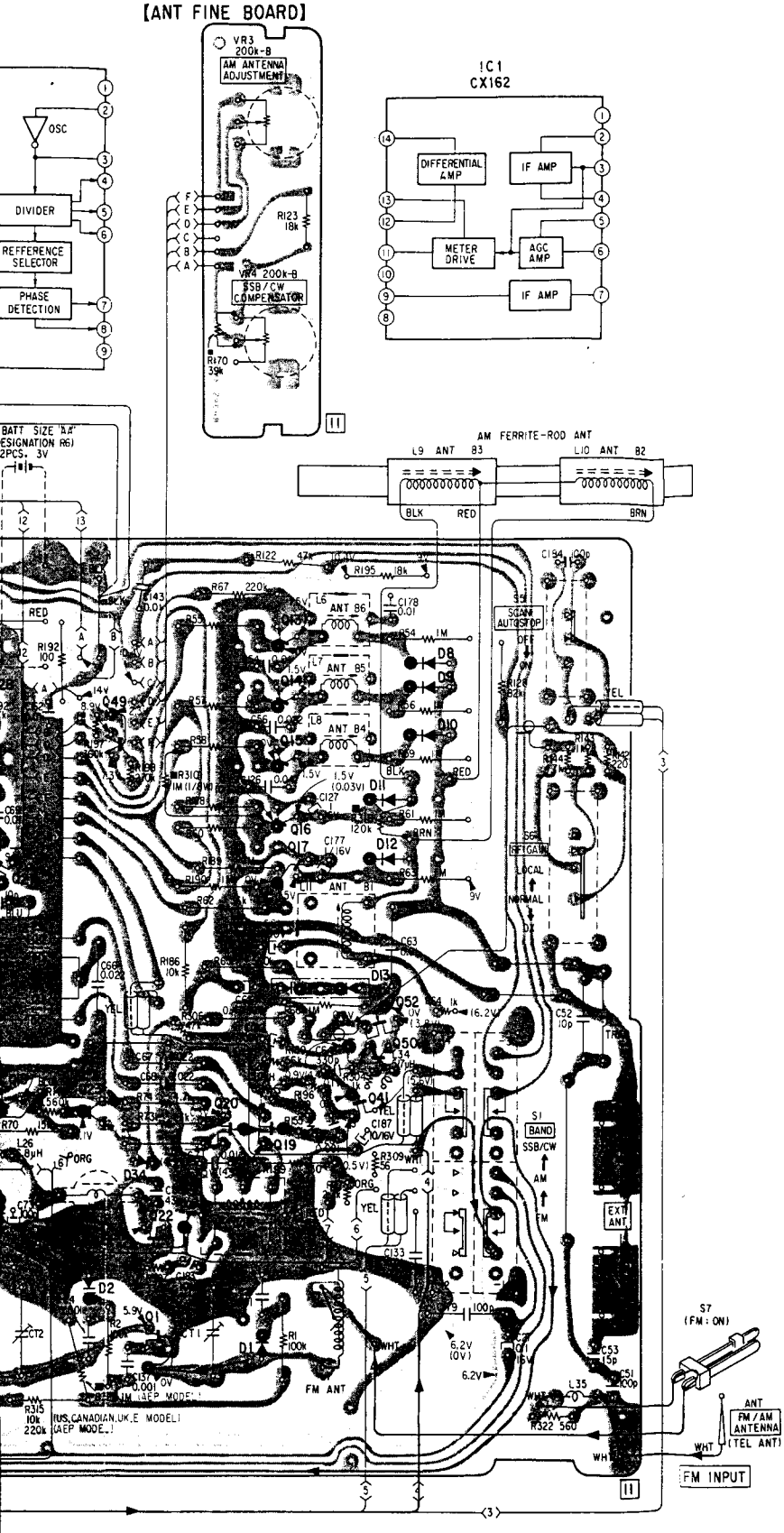
IC204


H
I
J
K
LCD MODULE PLATE
IC4,5
μPD2819C
SHIFT REGISTER (20 BITS)
LATCH (19 BITS)
SWITCH
PROGRAMMABLE DIVIDER (BCD 15 BITS)
OSC
DIVIDER
REFFERENCE SELECTOR
PHASE DETECTION
[ANT FINE BOARD]
VR3 200k-B
AM ANTENNA ADJUSTMENT
VR4 200k-B
SSB/CW COMPENSATOR
IC1
CX162
DIFFERENTIAL AMP
METER DRIVE
[SWITCH (B) BOARD]
S203 UP
TUNING
DIRECT TUNING
S208 EXECUTE
MEMORY PRESET
DRY BATT SIZE "AA" (IEC DESIGNATION R6) 2PCS. 3V
0.075mA
TOTAL CURRENT
FM 190mA
AM SSB/CW 225mA
AM FERRITE
L9 ANT B3
US,CANADIAN,U.K,E MODEL
(AEP MODEL)
FM RF
FM ANT
SCAN AUTOSTOP
LOCAL
NORMAL
BAND
SSB/CW
AM
FM

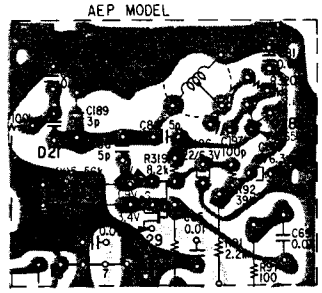
J K L M

1 2 3 4 5

【ANT FINE BOARD】

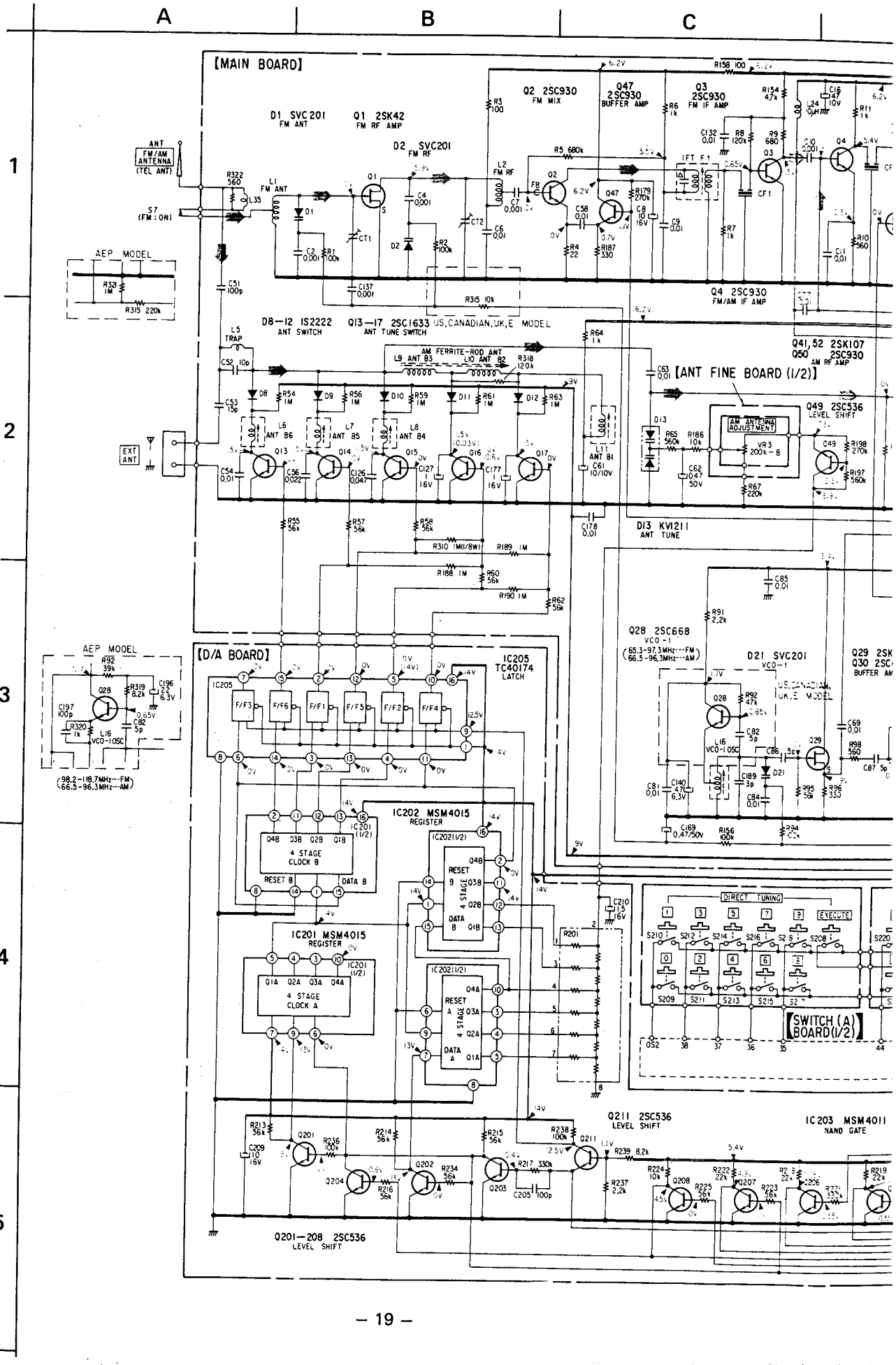


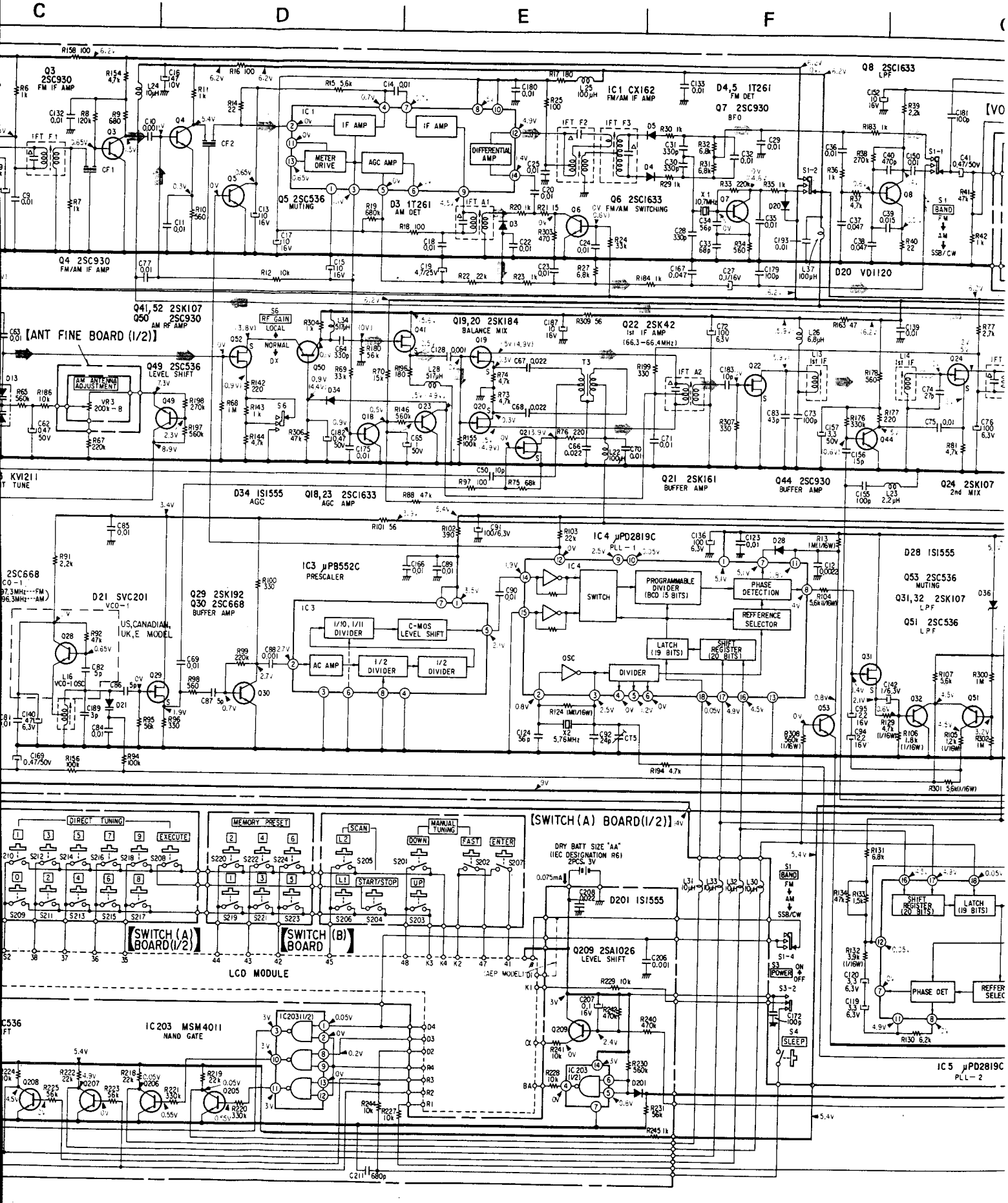
AEP MODEL

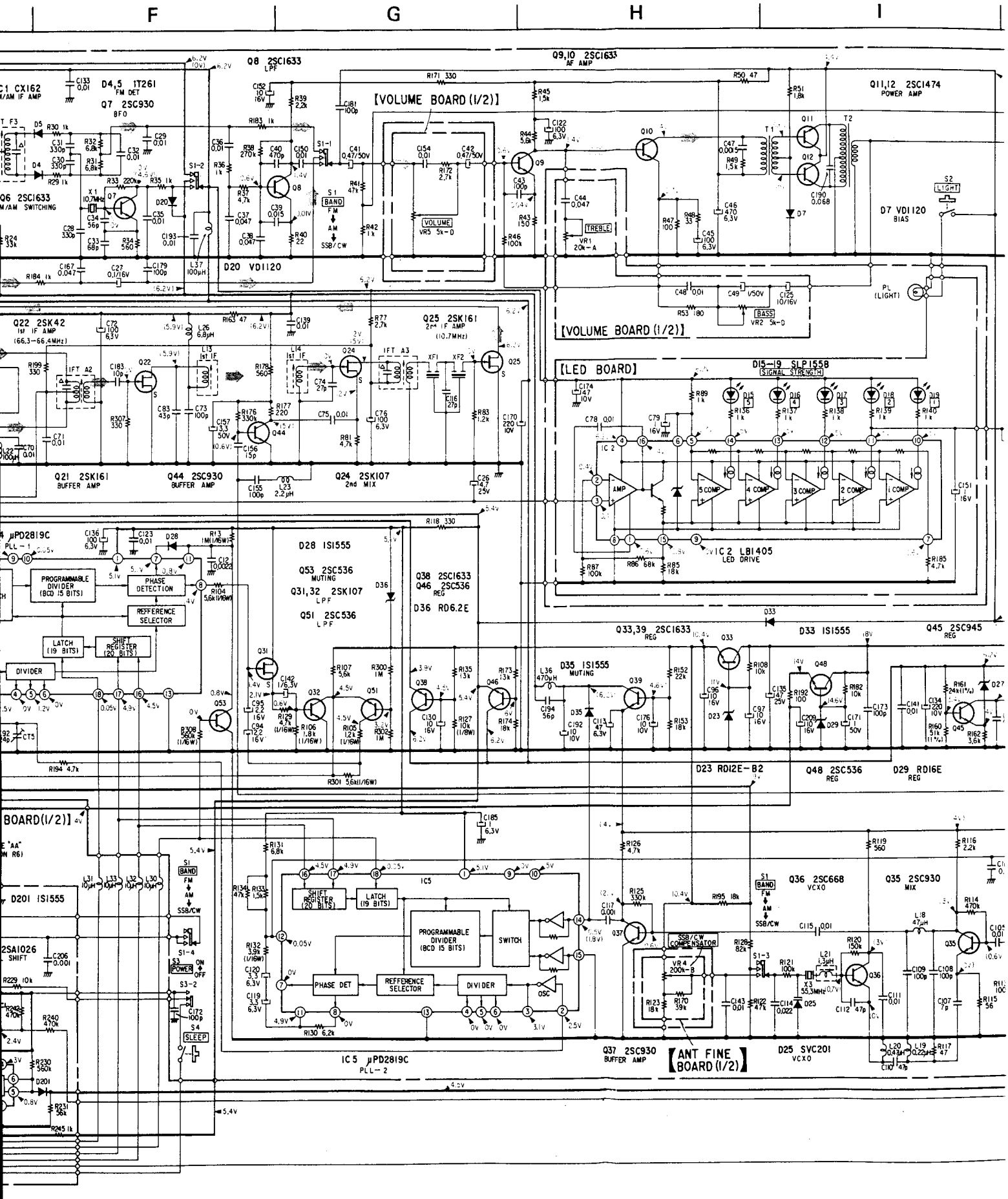


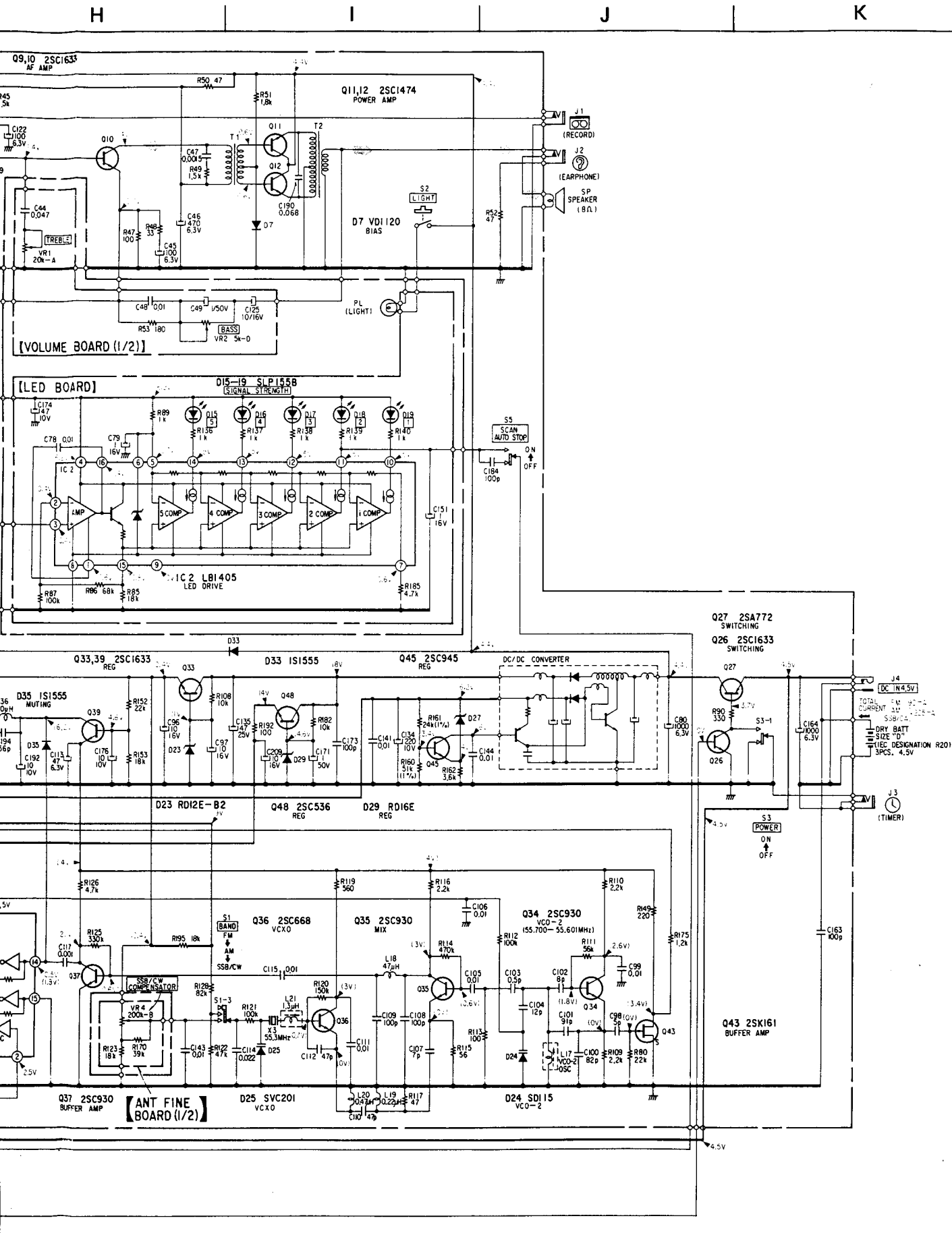
49 13 14 15 16 50 52 / 18 23 22 1 20 19 17 41	Q · IC
11 8 9 10 / 2 34 1 13 12	D

4-2. SCHEMATIC DIAGRAM




C
D
E
F
Q3 2SC930 FM IF AMP
Q4 2SC930 FM/AM IF AMP
Q5 2SC536 MUTING
IC1 CX162 FM/AM IF AMP
D4,5 1T261 FM DET
Q7 2SC930 BFO
Q8 2SC1633 LPF
D3 1T261 AM DET
Q6 2SC1633 FM/AM SWITCHING
D20 VD1120
Q41,52 2SK107 Q50 2SC930 AM RF AMP
[ANT FINE BOARD (1/2)]
Q49 2SC536 LEVEL SHIFT
Q19,20 2SK184 BALANCE MIX
Q22 2SK42 1st IF AMP (66.3-66.4MHz)
Q21 2SK161 BUFFER AMP
Q44 2SC930 BUFFER AMP
Q24 2SK107 2nd MIX
D34 1SI555 AGC
Q18,23 2SC1633 AGC AMP
IC3 μPB552C PRESCALER
IC4 μPD2819C PLL-1
D28 1SI555
Q53 2SC536 MUTING
Q31,32 2SK107 LPF
Q51 2SC536 LPF
D21 SVC201 VCO-1
Q29 2SK192 Q30 2SC668 BUFFER AMP
US,CANADIAN, UK,E MODEL
Q28
L16 VCO-1 OSC
D21
Q29
Q30
PROGRAMMABLE DIVIDER (BCD 15 BITS)
PHASE DETECTION
REFFERENCE SELECTOR
SWITCH
LATCH (19 BITS)
SHIFT REGISTER (20 BITS)
DIVIDER
OSC
1/10, 1/11 DIVIDER
C-MOS LEVEL SHIFT
AC AMP
1/2 DIVIDER
1/2 DIVIDER
[SWITCH (A) BOARD(1/2)]
DIRECT TUNING
MEMORY PRESET
SCAN
MANUAL TUNING
DOWN
FAST
ENTER
EXECUTE
START/STOP
UP
[SWITCH (A) BOARD(1/2)]
[SWITCH (B) BOARD]
LCD MODULE
DRY BATT SIZE "AA" (IEC DESIGNATION R6) 2PCS. 3V
D201 1SI555
Q209 2SA1026 LEVEL SHIFT
IC203 MSM4011 NAND GATE
IC5 μPD2819C PLL-2
SHIFT REGISTER (20 BITS)
LATCH (19 BITS)
PHASE DET
SLEEP
POWER
BAND
FM
AM
SSB/CW


F
G
H
I
Q8 2SC1633
LPF
Q9,10 2SC1633
AF AMP
Q11,12 2SC1474
POWER AMP
D4,5 1T261
FM DET
Q7 2SC930
BFO
[VOLUME BOARD (1/2)]
VOLUME
VR5 5k-D
TREBLE
VR1 20k-A
BASS
VR2 5k-D
D7 VD1120
BIAS
D20 VD1120
Q22 2SK42
1st IF AMP
(66.3-66.4MHz)
Q25 2SK161
2nd IF AMP
(10.7MHz)
[LED BOARD]
D15-19 SLP1558
SIGNAL STRENGTH
IC2 LB1405
LED DRIVE
Q21 2SK161
BUFFER AMP
Q44 2SC930
BUFFER AMP
Q24 2SK107
2nd MIX
μPD2819C
PLL-1
PROGRAMMABLE DIVIDER (BCD 15 BITS)
PHASE DETECTION
REFFERENCE SELECTOR
LATCH (19 BITS)
SHIFT REGISTER (20 BITS)
DIVIDER
D28 1S1555
Q53 2SC536
MUTING
Q31,32 2SK107
LPF
Q51 2SC536
LPF
Q38 2SC1633
Q46 2SC536
REG
D36 RD6.2E
Q33,39 2SC1633
REG
D33 1S1555
Q45 2SC945
REG
D35 1S1555
MUTING
D23 RD12E-B2
Q48 2SC536
REG
D29 RD16E
BOARD(1/2)]
D201 1S1555
2SA1026
SHIFT
S1 BAND FM AM SSB/CW
S3 POWER ON OFF
S4 SLEEP
IC5 μPD2819C
PLL-2
SHIFT REGISTER (20 BITS)
LATCH (19 BITS)
PROGRAMMABLE DIVIDER (BCD 15 BITS)
SWITCH
PHASE DET
REFFERENCE SELECTOR
DIVIDER
OSC
Q36 2SC668
VCXO
Q35 2SC930
MIX
SSB/CW COMPENSATOR
VR4 200k-B
Q37 2SC930
BUFFER AMP
[ANT FINE BOARD (1/2)]
D25 SVC201
VCXO


H
I
J
K
1
2
3
4
5
Q9,10 2SC1633
AF AMP
Q11,12 2SC1474
POWER AMP
D7 VDI120
BIAS
J1
(RECORD)
J2
(EARPHONE)
SP
SPEAKER
(8Ω)
S2
LIGHT
TREBLE
VR1
20k-A
BASS
VR2 5k-B
PL
(LIGHT)
[VOLUME BOARD (1/2)]
[LED BOARD]
D15-19 SLP1558
SIGNAL STRENGTH
IC 2 LB1405
LED DRIVE
S5
SCAN
AUTO STOP
ON
OFF
Q27 2SA772
SWITCHING
Q26 2SC1633
SWITCHING
Q33,39 2SC1633
REG
D33 1S1555
Q45 2SC945
REG
DC/DC CONVERTER
D35 1S1555
MUTING
J4
DC IN 4.5V
DRY BATT
SIZE "D"
(IEC DESIGNATION R20)
3PCS. 4.5V
S3
POWER
ON
OFF
J3
(TIMER)
D23 RD12E-B2
Q48 2SC536
REG
D29 RD16E
REG
S1
BAND
FM
AM
SSB/CW
Q36 2SC668
VCXO
Q35 2SC930
MIX
Q34 2SC930
VCO-2
(55.700-55.601MHz)
SSB/CW
COMPENSATOR
VR4
200k-B
X3
55.3MHz
VCO-2
OSC
Q43 2SK161
BUFFER AMP
Q37 2SC930
BUFFER AMP
[ANT FINE
BOARD (1/2)]
D25 SVC201
VCXO
D24 SDI15
VCO-2

Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- △ : internal component.
- ——— : B+ bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (20 kΩ/V).

  no mark: FM FREQUENCY DISPLAY: 98.1 MHz
  ( ) : AM FREQUENCY DISPLAY: 1023 kHz
  (( )) : SSB/CW
- ⟹ : signal path.
- Voltage variations may be noted due to normal production tolerances.
- **Switches**

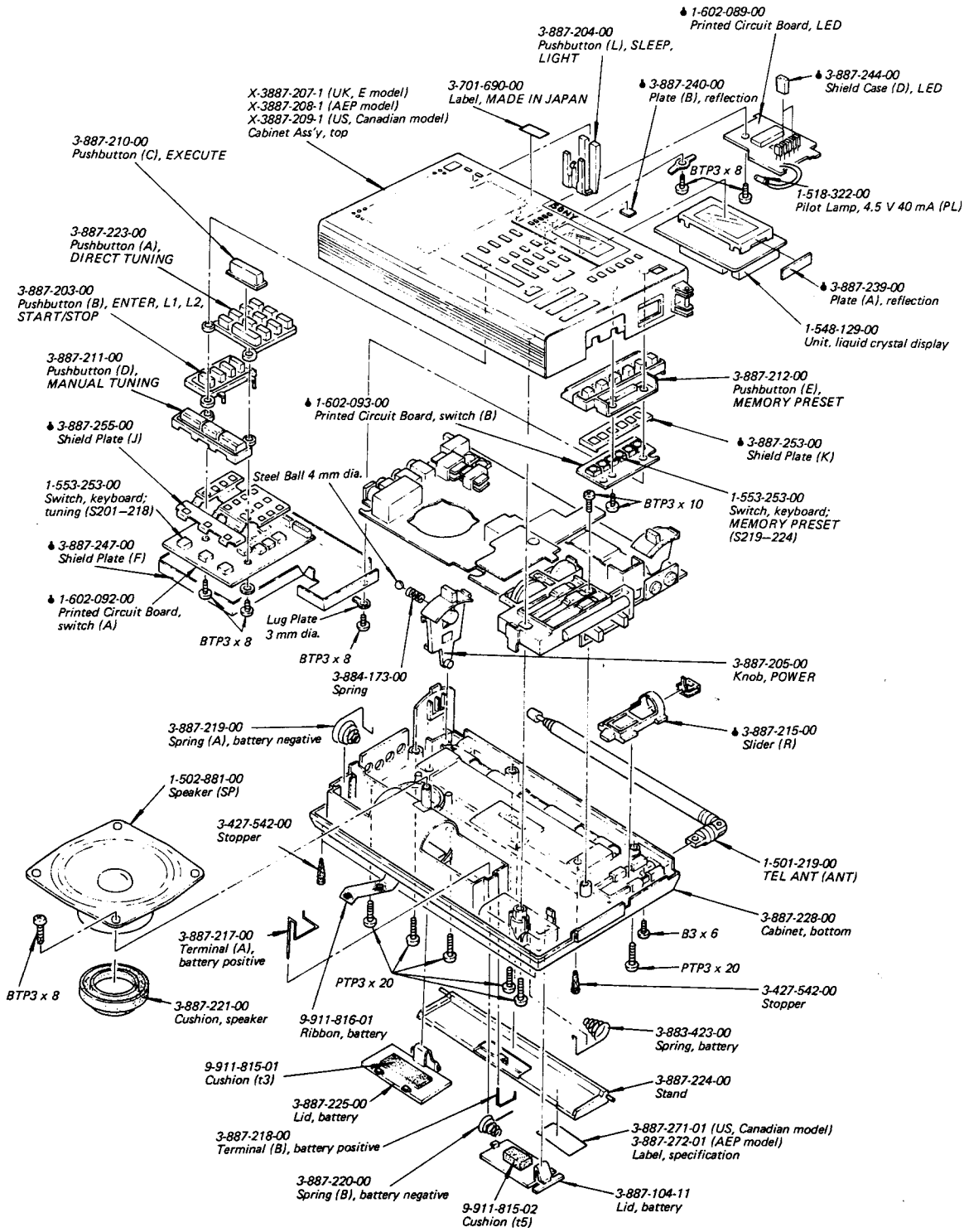
Ref. No.	Switch	Position
S1	BAND	FM
S2	LIGHT	OFF
S3	POWER	OFF
S4	SLEEP	OFF
S5	SCAN AUTO STOP	OFF
S6	RF GAIN	NORMAL
S7	ANT SELECTOR	ON
S201	DOWN	OFF
S202	FAST	OFF
S203	UP	OFF
S204	START STOP	OFF
S205	L2	OFF
S206	L1	OFF
S207	ENTER	OFF
S208	EXECUTE	OFF
S209	0	OFF
S210	1	OFF
S211	2	OFF
S212	3	OFF
S213	4	OFF
S214	5	OFF
S215	6	OFF
S216	7	OFF
S217	8	OFF
S218	9	OFF
S219	MEMORY 1	OFF
S220	MEMORY 2	OFF
S221	MEMORY 3	OFF
S222	MEMORY 4	OFF
S223	MEMORY 5	OFF
S224	MEMORY 6	OFF

SECTION 5
EXPLODED VIEWS

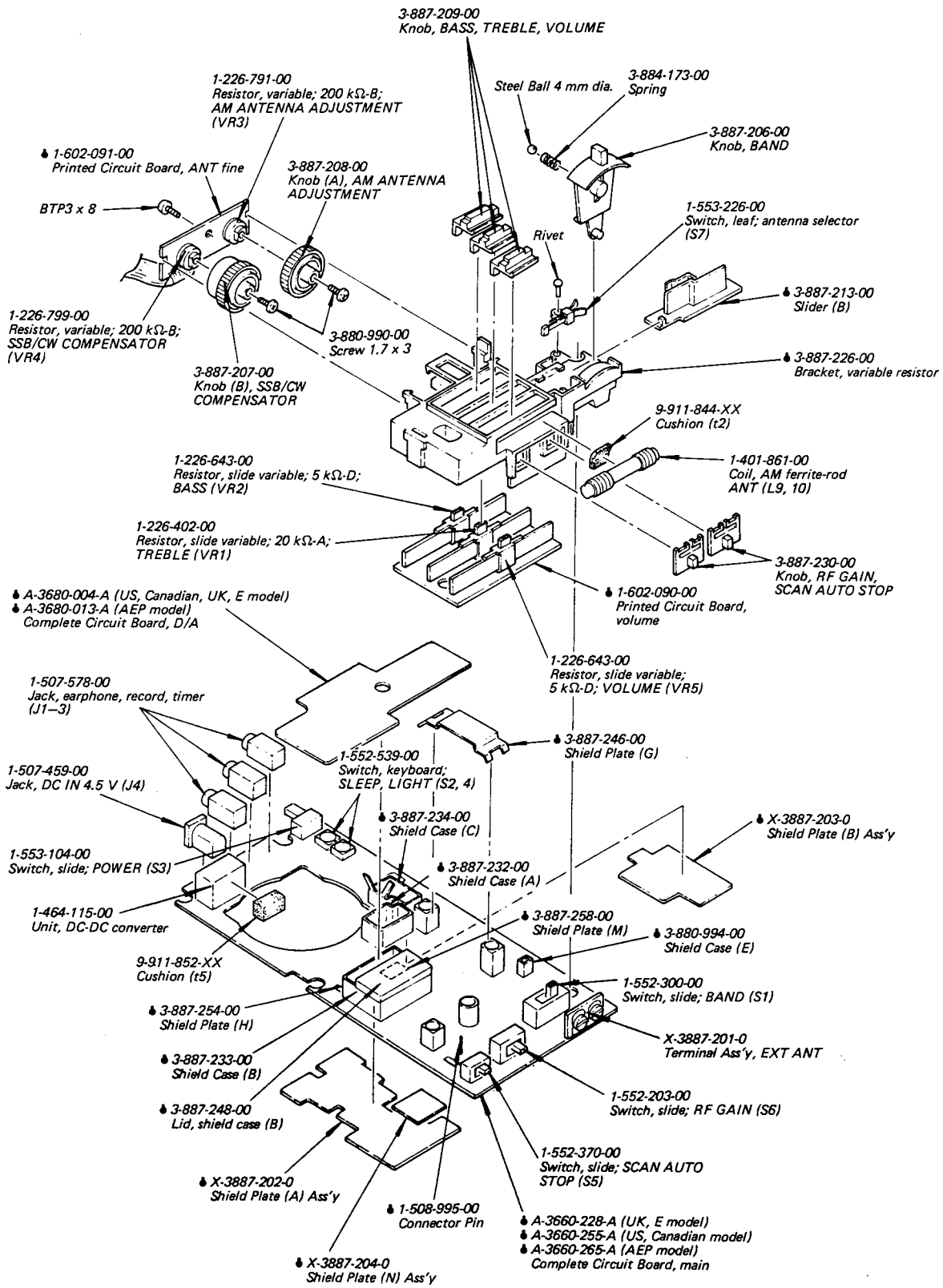
Note:

- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head

5-1.



5-2.


3-887-209-00
Knob, BASS, TREBLE, VOLUME
1-226-791-00
Resistor, variable; 200 kΩ-B;
AM ANTENNA ADJUSTMENT
(VR3)
Steel Ball 4 mm dia.
3-884-173-00
Spring
3-887-206-00
Knob, BAND
1-602-091-00
Printed Circuit Board, ANT fine
3-887-208-00
Knob (A), AM ANTENNA
ADJUSTMENT
BTP3 x 8
1-553-226-00
Switch, leaf; antenna selector
(S7)
Rivet
3-887-213-00
Slider (B)
1-226-799-00
Resistor, variable; 200 kΩ-B;
SSB/CW COMPENSATOR
(VR4)
3-880-990-00
Screw 1.7 x 3
3-887-226-00
Bracket, variable resistor
3-887-207-00
Knob (B), SSB/CW
COMPENSATOR
9-911-844-XX
Cushion (t2)
1-226-643-00
Resistor, slide variable; 5 kΩ-D;
BASS (VR2)
1-401-861-00
Coil, AM ferrite-rod
ANT (L9, 10)
1-226-402-00
Resistor, slide variable; 20 kΩ-A;
TREBLE (VR1)
3-887-230-00
Knob, RF GAIN,
SCAN AUTO STOP
A-3680-004-A (US, Canadian, UK, E model)
A-3680-013-A (AEP model)
Complete Circuit Board, D/A
1-602-090-00
Printed Circuit Board,
volume
1-226-643-00
Resistor, slide variable;
5 kΩ-D; VOLUME (VR5)
1-507-578-00
Jack, earphone, record, timer
(J1–3)
3-887-246-00
Shield Plate (G)
1-552-539-00
Switch, keyboard;
SLEEP, LIGHT (S2, 4)
1-507-459-00
Jack, DC IN 4.5 V (J4)
3-887-234-00
Shield Case (C)
X-3887-203-0
Shield Plate (B) Ass'y
1-553-104-00
Switch, slide; POWER (S3)
3-887-232-00
Shield Case (A)
1-464-115-00
Unit, DC-DC converter
3-887-258-00
Shield Plate (M)
3-880-994-00
Shield Case (E)
9-911-852-XX
Cushion (t5)
1-552-300-00
Switch, slide; BAND (S1)
3-887-254-00
Shield Plate (H)
X-3887-201-0
Terminal Ass'y, EXT ANT
3-887-233-00
Shield Case (B)
1-552-203-00
Switch, slide; RF GAIN (S6)
3-887-248-00
Lid, shield case (B)
1-552-370-00
Switch, slide; SCAN AUTO
STOP (S5)
X-3887-202-0
Shield Plate (A) Ass'y
1-508-995-00
Connector Pin
A-3660-228-A (UK, E model)
A-3660-255-A (US, Canadian model)
A-3660-265-A (AEP model)
Complete Circuit Board, main
X-3887-204-0
Shield Plate (N) Ass'y

SECTION 6
ELECTRICAL PARTS LIST

- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref. No.	*Part No.*	*Description*
	SEMICONDUCTORS	
	Transistors	
Q1	8-727-312-00	2SK42-2
Q2–4	8-729-803-04	2SC930
Q5, 6	8-729-663-47	2SC1364
Q7	8-729-803-04	2SC930
Q8–10	8-729-663-47	2SC1364
Q11, 12	8-760-335-10	2SC1474
Q13–18	8-729-663-47	2SC1364
Q19, 20	8-729-218-42	2SK184
Q21	8-729-216-13	2SK161
Q22	8-727-312-00	2SK42-2
Q23	8-729-663-47	2SC1364
Q24	8-722-383-40	2SK23A-834
Q25	8-729-216-13	2SK161
Q26	8-729-663-47	2SC1364
Q27	8-760-514-10	2SA772-14
Q28	8-729-806-84	2SC668
Q29	8-729-216-13	2SK161
Q30	8-729-806-84	2SC668
Q31	8-722-381-20	2SK23A-812
Q32, 33	8-729-663-47	2SC1364
Q34, 35	8-729-803-04	2SC930
Q36	8-729-806-84	2SC668
Q37	8-729-803-04	2SC930
Q38, 39	8-729-663-47	2SC1364
Q41	8-722-383-40	2SK23A-834
Q43	8-729-216-13	2SK161
Q44	8-729-803-04	2SC930
Q45, 46	8-729-663-47	2SC1364
Q47	8-729-803-04	2SC930
Q48, 49	8-729-663-47	2SC1364
Q50	8-729-803-04	2SC930
Q51	8-729-663-47	2SC1364
Q52	8-722-383-40	2SK23A-834
Q53 Q201–208	8-729-663-47	2SC1364
Q209	8-729-612-77	2SA1027R
Q211	8-729-663-47	2SC1364
	ICs	
IC1	8-751-620-00	CX162
IC2	8-759-814-05	LB1405
IC3	8-759-155-21	μPB552C
IC4, 5	8-759-128-19	μPD2819C
IC201, 202	8-759-240-15	TC4015BP
IC203	8-759-240-11	TC4011BP
IC205	8-759-241-74	TC40174BP
	Diodes	
D1, 2	8-719-912-01	SVC201
D3–5	8-719-026-11	1T261
D7	8-719-112-01	VD1120
D8	8-712-600-00	1T26
D9–12	8-719-100-02	1S2222
D13	8-719-912-11	KV1211
D15–19	8-719-921-55	SLP155B
D20	8-719-112-01	VD1120
D21	8-719-912-01	SVC201
D23	8-719-930-12	EQB01-12Z
D24	8-719-713-93	1S2139C
D25	8-719-912-01	SVC201
D27	8-719-136-17	RD3.6E-BZ8
D28	8-719-815-55	1S1555
D29	8-719-116-07	RD16E
D33–35	8-719-815-55	1S1555
D36	8-719-162-07	RD6.2E
D201	8-719-815-55	1S1555

CAPACITORS

Common capacitors are omitted. Refer to the lists on pages 28 and 29 for their part numbers. pF: μμF.

C28	1-161-317-00	330 pF	50 V	ceramic
C74	1-102-602-00	27 pF	50 V	ceramic
C83	1-102-607-00	43 pF	50 V	ceramic

Ref. No.	Part No.	Description
C100	1-102-653-00	82 pF 50 V ceramic
C101	1-102-654-00	91 pF 50 V ceramic
CT1, 2	1-141-179-12	Trimmer
CT5	1-141-232-00	11 pF, trimmer

RESISTORS

All resistors are in ohms. Common ¼ W carbon resistors are omitted. Refer to the list on the last page for their part numbers. k: 1000 Ω, M: 1000 kΩ.

R13	1-247-053-00	1 M 1/8 W carbon
R104	1-209-775-00	5.6 k 1/16 W micro
R105	1-209-765-00	1.2 k 1/16 W micro
R106	1-209-878-00	1.8 k 1/16 W micro
R124	1-247-053-00	1 M 1/8 W carbon
R127	1-246-795-00	10 k 1/8 W carbon
R129	1-209-773-00	4.7 k 1/16 W micro
R132	1-209-771-00	3.9 k 1/16 W micro
R160	1-246-514-00	51 k 1/4 W carbon (1 %)
R161	1-246-506-00	24 k 1/4 W carbon (1 %)
R201	1-231-615-00	Encapsulated Component
R243	1-246-795-00	10 k 1/8 W carbon
R301	1-209-775-00	5.6 k 1/16 W micro
R308	1-211-695-00	560 k 1/16 W micro
R310	1-247-053-00	1 M 1/8 W carbon
VR1	1-226-402-00	20 k-A, slide variable; TREBLE
VR2	1-226-643-00	5 k-D, slide variable; BASS
VR3	1-226-791-00	200 k-B, variable; AM ANTENNA ADJUSTMENT
VR4	1-226-799-00	200 k-B, variable; SSB/CW COMPENSATOR
VR5	1-226-643-00	5 k-D, slide variable; VOLUME

MISCELLANEOUS

ANT	1-501-219-00	TEL ANT
CF1, 2	1-527-184-XX	Filter, ceramic; 10.7 MHz
FB	1-543-152-00	Ferrite Bead
IFT-A1	1-404-235-00	Transformer, AM IF
IFT-A2	1-404-233-00	Transformer, AM IF
IFT-A3	1-404-234-00	Transformer, AM IF

Ref. No.	Part No.	Description
IFT-F1	1-403-872-00	Transformer, FM IF
IFT-F2	1-403-959-00	Transformer, FM discriminator
IFT-F3	1-403-953-00	Transformer, FM discriminator
J1–3	1-507-578-00	Jack; earphone, record, timer
J4	1-507-459-00	Jack, DC IN 4.5 V
♦L1	1-422-008-00	Coil, FM ANT (US, Canadian, UK, E model)
	1-422-026-00	Coil, FM ANT (AEP model)
♦L2	1-420-995-00	Coil, FM RF (US, Canadian, UK, E model)
	1-422-026-00	Coil, FM RF (AEP model)
♦L5	1-401-456-00	Coil, AM trap
L6	1-401-843-00	Coil, AM ANT
L7	1-401-842-00	Coil, AM ANT
L8	1-401-841-00	Coil, AM ANT
L9, 10	1-401-861-00	Coil, AM ferrite-rod ANT
L11	1-401-838-00	Coil, AM ANT
L13, 14	1-459-287-00	Coil, AM IF
L16	1-459-289-00	Coil, VCO-1 OSC (US, Canadian, UK, E model)
	1-459-337-00	Coil, VCO-1 OSC (AEP model)
L17	1-459-290-00	Coil, VCO-2 OSC
L18	1-408-072-00	Microinductor, 47 μH
L19	1-422-013-00	Coil, 0.22 μH
♦L20	1-425-608-00	Coil, 0.47 μH
L21	1-405-895-00	Coil, OSC; 1.3 μH
L22	1-408-080-00	Microinductor, 100 μH
L23	1-407-182-XX	Microinductor, 2.2 μH
L24	1-408-117-00	Microinductor, 10 μH
L25	1-407-169-XX	Microinductor, 100 μH
L26	1-408-188-XX	Microinductor, 6.8 μH
L28	1-408-362-00	Microinductor, 517 μH
L30–33	1-408-284-00	Microinductor, 10 μH
L34	1-408-362-00	Microinductor, 517 μH
♦L35	1-425-607-00	Coil, ANT
L36	1-408-096-00	Microinductor, 470 μH
L37	1-408-080-00	Microinductor, 100 μH
PL	1-518-322-00	Pilot Lamp, 4.5 V 40 mA
S1	1-552-300-00	Switch, slide; BAND

Ref. No.	*Part No.*	*Description*
S2	1-552-539-00	Switch, keyboard; LIGHT
S3	1-553-104-00	Switch, slide; POWER
S4	1-552-539-00	Switch, keyboard; SLEEP
S5	1-552-370-00	Switch, slide; SCAN AUTO STOP
S6	1-552-203-00	Switch, slide; RF GAIN
S7	1-553-226-00	Switch, leaf; antenna selector
S201–218	1-553-253-00	Switch, keyboard; tuning
S219–224	1-553-253-00	Switch, keyboard; MEMORY PRESET
SP	1-502-881-00	Speaker
T1	1-423-245-00	Transformer, input
T2	1-427-386-XX	Transformer, output
T3	1-417-033-00	Transformer, antenna matching
X1	1-527-545-00	Crystal, 10.7 MHz
X2	1-527-546-00	Crystal, 5.76 MHz
X3	1-527-547-00	Crystal, 55.3135 MHz
XF1, 2	1-527-549-00	Filter, crystal
	1-464-115-00	Unit, DC-DC converter
	♦1-508-995-00	Connector Pin
	1-548-129-00	Unit, liquid crystal display

COMPLETE CIRCUIT BOARDS

♦A-3660-228-A	Main (UK, E model)
♦A-3660-255-A	Main (US, Canadian model)
♦A-3660-265-A	Main (AEP model)
♦A-3680-004-A	D/A (US, Canadian, UK, E model)
♦A-3680-013-A	D/A (AEP model)

PRINTED CIRCUIT BOARDS

♦1-602-089-00	LED
♦1-602-090-00	Volume
♦1-602-091-00	ANT Fine
♦1-602-092-00	Switch (A)
♦1-602-093-00	Switch (B)

ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
X-3844-608-0	Belt Ass'y, shoulder
X-3887-205-0	Lead Wire Ass'y, external antenna
1-463-330-11	AC Adapter, AC-120 W (US model)
1-463-331-11	AC Adapter, AC-120 W (Canadian model)
1-504-059-11	Earphone, ME-20H
3-701-630-00	Bag, plastic; instruction manual
3-884-538-00	Sheet, protection; set
3-887-231-00	Cushion
3-887-276-00	Carton (UK, E model)
3-887-282-00	Carton (US, Canadian model)
3-887-284-00	Carton (AEP model)
3-995-866-11 3-993-240-11)	Manual, instruction (AEP model)
3-995-866-21	Manual, instruction (US model)
3-995-866-21 3-993-239-31)	Manual, instruction (Canadian model)
3-995-866-52	Manual, instruction (UK, E model)

ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	–	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	–
3300	1-121-661-00	1-123-075-00	1-123-071-00	–	–	–

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	–	–	–	–
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	–	1-123-028-00
3.3	1-121-995-00	–	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	–	–
47	1-123-251-00	1-121-919-00	–	–
100	1-123-084-00	–	–	–

CERAMIC CAPACITORS

CAP. (pF)	RATING 50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

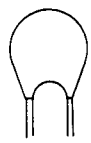
0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one. 25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS

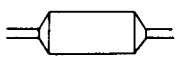
CAP. (μF)	RATING 50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	–	–
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	–	–
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	–	–
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	–	–
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

→: Use the high voltage rated one.

CAP. (μF)	RATING 3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00
0.015						→	1-131-397-00
0.022						→	1-131-398-00
0.033						→	1-131-399-00
0.047						→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	–	–	–	–	1-131-412-00	→	1-131-406-00
0.68	–	–	–	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	–	–	1-131-418-00	–	1-131-413-00	→	1-131-408-00
1.5	–	1-131-421-00	–	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	–	1-131-419-00	–	1-131-414-00	1-131-355-00	1-131-349-00
3.3	–	1-131-422-00	–	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	–	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	–	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	–
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	–			
68	1-131-394-00	1-131-388-00	–	–			
100	1-131-395-00	–	–	–			



TANTALUM CAPACITORS

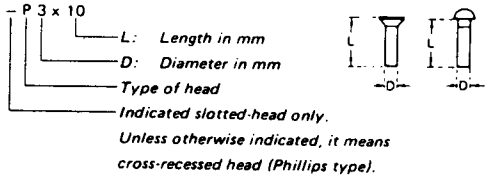
CAP. (μF)	RATING 3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22			–	–	1-131-262-00	1-131-278-00
0.33			–	–	1-131-263-00	1-131-279-00
0.47			1-131-169-00	–	1-131-264-00	1-131-280-00
0.68			–	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	–	1-131-266-00	1-131-282-00
1.5		1-131-250-00	–	–	1-131-267-00	1-131-283-00
2.2		–	–	1-131-259-00	1-131-268-00	1-131-284-00
3.3		–	1-131-255-00	–	1-131-269-00	–
4.7		1-131-251-00	1-131-171-00	–	1-131-270-00	–
6.8		–	–	1-131-260-00	1-131-271-00	–
10	–	–	1-131-256-00	–	1-131-272-00	–
15	–	1-131-252-00	–	1-131-261-00		
22	–	–	1-131-257-00	–		
33	1-131-176-00	1-131-253-00	1-131-173-00	–		
47	1-131-288-00	1-131-174-00	–	–		
100	1-131-177-00					

1/4 WATT CARBON RESISTORS

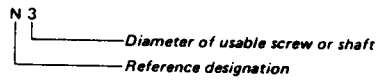
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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